DOCUMENT RESUME

ED 332 733 JC 900 135

AUTHOR Carter, Edith H., Ed.
TITLE Community College Journal for Research and Planning, Volume VII, Numbers 1 and 2.
INSTITUTION American Association of Community and Junior Colleges, Washington, D.C. National Council for Research and Planning.
PUB DATE 90
NOTE 106p.
PUB TYPE Collected Works - Serials (022) -- Viewpoints (Opinion/Position Papers, Essays, etc.) (120) -- Reports - Research/Technical (143)
JOURNAL CIT Community College Journal for Research and Planning; v7 n1-2 1989-90

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS Articulation (Education); College Environment; *College Planning; College Role; College School Cooperation; *Community Colleges; Decision Making; Enrollment Influences; Followup Studies; High Risk Students; Institutional Mission; *Institutional Research; Intercollegiate Cooperation; Long Range Planning; *Organizational Effectiveness; *Research Utilization; Two Year Colleges

ABSTRACT

Providing a forum for the exchange of information among members of the National Council for Research and Planning, this refereed journal offers articles on various aspects of community college research, management, and planning. The two issues of volume 7 contain the following articles: (1) "Case Studies of Community College High Risk Students: Does Social and Academic Integration Apply?" by R. Dan Walleri and Marcia Peglow-Hoch; (2) "The High School College Connection: Dual-Credit Programs," by Karen Conklin and James M. Williams; (3) "A Study of Staff Perceptions of Institutional Goals Before and After a Major Institutional Mission Change," by Fred H. Martin and Jerry W. Hardin; (4) "Planning for Results: A Guide for Planning Developed by Central Piedmont Community College," by John Quinley; (5) "Measures of Progress: Student Follow-Up in the Los Rios Community College District," by Beth S. Lee; (6) "Scans Solo: A One-Person Environmental Scanning Process," by Craig Clagett; (7) "Assessing the College Mission: The Starting Point for Institutional Effectiveness," by John Quinley; (8) "The Kentucky Retention Model for Community Colleges," by Brian E. Daly; (9) "The Role of Institutional Research in the Planning and Decision Making Processes," by James M. Anderson and Michael J. Viera; and (10) "Projected Population Growth and its Impact on the North Carolina Community College System," by Kathryn Baker Smith. The volumes conclude with annotated ERIC bibliographies on student recruitment, articulation between community colleges and universities; and adult education in the community College. (PAA)

ED332733

Community College Journal for Research and Planning

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NATIONAL COUNCIL FOR RESEARCH & PLANNING

Editor: Edith H. Carter

Volume VII, Number 1
and
Volume VII, Number 2

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COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

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COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

Referred Journal of the National Council for Research and Planning

A Council of the American Association of Community and Junior Colleges dedicated to the improvement of two-year post-secondary education through better research and planning.

An affiliate of the Association for Institutional Research.

Community College Journal for Research and Planning

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Community College Journal for Research and Planning
Volume 7, Number 1

CASE STUDIES OF COMMUNITY COLLEGE HIGH RISK STUDENTS: DOES SOCIAL AND ACADEMIC INTEGRATION APPLY?

R. Dan Walleri and Marcia Peglow-Hoch

Institutions of higher education increasingly attempt to demonstrate a value-added approach to document student outcomes. Additional resources now are focused on assessment and development of student tracking systems. If this path to quality assurance is to be achieved without sacrificing a commitment to access, even greater efforts will be needed to assist entering and returning students who are underprepared for college. This study reports on one institution's program for "high risk" students in an effort to better define the determinants of both student success and failure. The reported findings are based on structured interviews of a sample of students selected from a larger on-going project.

Students leave college for a variety of reasons. Many of these reasons have been identified as: lack of a specific goal, unrealistic expectations, personal, social or economic difficulties, or career uncertainty, among others (Astin, 1975; Aitken, 1982). A major problem is that attrition is difficult to identify until students actually become an attrition statistic. High risk students (usually identified by a set of pre-determined characteristics) are of concern to many institutions primarily because, as a group, they presumably have the highest potential for leaving the institution with their educational goal unrealized, and because these characteristics seem to hover within the scope of the institution to remediate.

This study attempts to describe one institution's approach to increasing student success and persistence among high risk students via a program entitled "Guided Studies". It outlines the research relating to outcomes of the program in particular and student perceptions regarding the determinants of both success and failure within the institution in general. The research reported here is impressionistic, with the intent to suggest a possible fruitful approach rather than to produce definitive results.

One traditional characteristic of high risk students is that, for whatever reason, they are academically under-prepared for college level work. In the fall of 1984, Mt. Hood Community College implemented its Guided Studies program, which was based on the premise that early identification of students with academic deficiencies and appropriate prescriptive classes to remedy those deficiencies would prevent students from enrolling in classes where predictability of success was minimal (Japely, Kennedy, and Walleri, 1987). Students would be required to take appropriate preparatory classes before entering into other courses requiring higher skill levels. This approach would prevent students from enrolling in classes for which they were under-prepared, and would offer them a chance to build necessary skills in order to succeed in subsequent course work.

Despite this intrusive program, some students were still not successful, and the research provided little concrete information on why some underprepared students were successful while others continued to fail (Walleri, 1987). To remedy this information gap, Bentler and Speckart (1981) have recommended that retention rates be examined from an attitudinal and behavioral view, particularly to determine if after several years student reflections influence perception of past experiences. Following this approach, the research reported here attempts to define the reasons for relative success and failure of high risk students.

The institution in question is a comprehensive community college located on the periphery of a large metropolitan area, serving primarily a white, middle class, suburban population. The average age of the over 23,000 annual unduplicated student population (apporximately 5400 FTE) is 32. Only 28 percent attend full-time, 58 percent are female, and 69 percent work full or part-time. Since these demographics are different from a typical traditional college student population, investigations regarding persistence patterns using models designed for four-year institutions, with more homogeneous populations, are helpful, yet suggest a need for continued, specific research targeting persistence patterns within the community college environment.

Tinto's (1975) theoretical model has been a helpful tool in attempting to understand student persistence. In summary form, Tinto's model specifies that students entering college bring with them a variety of attributes and background characteristics that have an impact on the expectations of their college experience. These commitments change during the student's stay in college as a result of integration into the academic and social systems of that institution. Tinto includes grades and intellectual development in the academic system, and student-to-faculty interactions in the social system. The level to which a student integrates into those systems is the primary determinant of choosing to stay and meet objectives or to drop out of the institution.

A considerable body of research, primarily quantitative, has tended to confirm Tinto's model, especially for traditional college age students at four-year institutions (Pascarella and Chapman, 1983; Terenzini, Pascarella, Theophilides, and Lorang, 1985). However, subsequent research on non-traditional student populations in general (Pascarella, Duby, and Iverson, 1983; Metzner and Bean, 1987), and community college students in particular (Pascarella, Smart, and Ethington, 1986; Voorhees, 1987), has resulted in suggested changes to the model. Specifically, these findings suggest that student persistence is independent of, or only minimally impacted by, academic and social integration. As a result, a separate field of research has emerged based on the purported unique characteristics and attendance patterns of non-traditional students (usually defined as older, commuting and/or part-time students in which education is not as central to their lives as it may be for traditional full-time students).

It is our hypothesis that these findings are a product of the heterogeneous nature of non-traditional student populations combined with methodological approaches (i.e. undifferentiated student tracking and standardized surveys). This hypothesis is tested through the use of case studies. Kinnick, Westine, and Kempner's (1987) longitudinal analysis of baccalaureate degree completion for community college students found evidence in support of this hypothesis. Further, these latter findings were based on case studies, and were not uncovered in the quantitative analysis.

A major implication derived from Tinto's work and related research is the comprehensive nature of the variables influencing student persistence and the shift toward relationship issues: relationships between students, between students and faculty, and between students/faculty and systems. Roueche and Baker's (1987) study of the reforms at Miami-Dade Community College suggests that we can draw a relationship between the total instructional program and student performance.

Finally, a major consideration in this study is the importance of incorporating student intentions and objectives in evaluating the persistence patterns of non-traditional students (Noel, Levitz, and Saluri, 1986). This variable is crucial due to the diversity in goals of non-traditional students, goals which may not include degree completion. Tinto's model, and much of the research, assumes that all students are intending to earn a degree, and such an assumption can result in misleading conclusions about the causes and consequences of student attrition.

The Guided Studies Program

The Guided Studies program is a key part of the college's comprehensive system involving testing and placement, career and academic counseling, an orientation course for new students, developmental and tutorial services, and other services for targeted populations (handicapped, returning women, etc.) Further, a program based on counselor or academic advisor intervention has been initiated for students experiencing academic difficulty. Thus, Guided Studies does not exist in a vacuum but rather is part of a total college effort to promote student success.

If a student scores below 41 on the reading portion of the Comparative Guidance Placement Test (CGP) it is generally an indication that the student has difficulty reading texts written at the high school level. A score below 45 on the writing portion of the CGP suggests that the student has poor grammar and usage skills. Scoring less than 106 on Math Test C or below 90 on Math Test D portions of the CGP indicates that the student has difficulty in understanding and computing with fractions, decimals, and/or percents. In all these instances it is presumed that remedying these deficiencies would be appropriate and is necessary for success in most college level course work.

Typically, as many as 60 percent of all entering students test below these standards, placing them in the Guided Studies program. The enrollment options of these students are restricted to developmental education classes and a few selected courses identified by the faculty as appropriate for students with academic deficiencies. Successful completion of the prescribed remedial courses allows the student to move into regular status.

Methodology

For the last four years, the institution has been tracking the original 563 first-time enrolled students, who were placed in the Guided Studies program in the fall of 1984 (Walleri, 1987). Based on a comparison with a similar group of academically deficient students entering prior to implementation of the Guided Studies program, the two-year persistence rate of the fall 1984 group increased by 8 percent. For some sub-groups (e.g., vocational majors) the persistence rate increased as much as 15 percent. Of the fall 1984 students, approximately 60 percent successfully completed their developmental course work; about 40 percent of those required two or more terms.

During 1986-87, a follow-up survey was conducted on this original group to evaluate their experience in the Guided Studies program, rate their satisfaction with the institution and its staff, and assess, from their perspective, attaintment of personal and academic goals. Approximately one quarter of the original 563 students responded. A key finding from this survey, despite the generally successful findings reported above, is that less than half of the respondents indicated that they had achieved their personal and academic goals.

The sample of respondents to the 1986-87 survey was divided into four sub-categories, based on a combination of college-defined and student-defined success criteria. Group 1: Students who were defined as successful by the college's Standard of Academic Progress (a cumulative GPA of 2.00 or greater) and whose self-report indicated personal and academic success. Group 2: Students who were unsuccessful by instutitional standards (less than a cumulative 2.00 GPA) and whose self-report indicated a lack of personal and academic success. Group 3: Students who were successful by institutional standards but whose self-report indicated lack of academic and personal success. Group 4: Those who were unsuccessful by institutional standards but who experienced, from their perspective. academic and personal success.

A sample of 20 students was randomly selected to participate in a personal interview session to further identify and define the variables associated with student success. The in-person survey instrument was adapted from Kinnick, Westine, and Kempner (1987). Prior to the actual interview each participant was asked to complete a questionnaire addressing aspects of academic and social integration (adapted, in part, from Pascarella and Terenzini, 1980). Because of the stated hypothesis, we are particularly interested in personal associations (such as a counselor or faculty member) which would account for those students who were successful. (Copies of both instruments used in this study are available from the authors.)

The questions included in the interview were constructed in order to learn more about the students' experiences while enrolled at MHCC and the relationship of these experiences to their relative success or failure in obtaining personal and academic goals. Interview participants were asked questions about their employment patterns, income levels, parents' occupations, siblings' educational attainments, and also about their satisfaction with high school curriculums as preparation for post-secondary work.

Results

Table 1 offers a summary of the four categories of students, the total number of students in each group from the 1986-87 follow-up survey, and the sample of students participating in the in-person interviews. Approximately 75 percent of the pool of students from which the survey sample was drawn tended to concur with success as defined by the college. Nonetheless, for a significant minority, success was determined by different standards. The four groups interviewed are not of equal size due to the small number of students in Group 4, and to the difficulty in arranging interviews.

Table 1
Categories and Sample Size for
In-Person Surveys with High Risk Students

	College Defined Success	Student Defined Success	N	Sample Interviewed
#1	YES	YES	83	7
#2	NO	NO	44	5
#3	YES	NO	37	5
#4	NO	NO	9	3
TOTAL			173	20

Selected characteristics of the students interviewed for this study (N=20) are reported in Table 2. The major finding here is the similarity between the most successful and least successful students (Groups 1 and 2) in terms of age and declared student major (primarily vocational). It is often noted that older students tend to be more successful than younger students as they are often more mature, have a higher degree of goal specificity, and are more highly motivated. It is less often acknowledged that older students have just the opposite attributes, as suggested by the higher attrition rate in Group 2. The data on student declared major is less significant than students' commitment to a specific field, as will be discussed below.

Table 2
Selected Characteristics of Sample Interviewed (N=20)

	Group	#1	#2	#3	#4
Sex:	Male	3	2	3	1
	Female	4	3	2	2
Age: Fall 1984					
	21 or less	2	1	4	3
	22 or more	5	4	1	0
Major:					
	Vocational	6	4	2	0
	Transfer	0	0	2	2
	General Studies	1	1	1	1
Quarters of Continuous Attendance (from Fall 1984)					
	One		2		2
	Two				
	Three		1	2	1
	Four	3	2		
	Five			1	
	Six or more	4		2	

The study found strong evidence in support of Tinto's model which specifies, in part, that experiences which promote social and academic integration into the college community contribute to behavioral and attitudinal elements of success. Those students who were defined successful, by both institutional and self-reported standards, had significant attributes in common. They all reported a close personal relationship with at least one faculty member. Further, these students were satisfied with access to, and the service received from, the college's counseling center. These students tended to have shared values with their classmates and more than half reported satisfying relationships with other students. All of these students felt their instructors were genuinely interested in teaching and that their non-classroom contact with faculty members was a positive factor in their academic and career growth. They rated the willingness of instructors to be available to students as a significant factor in their success equation. This particular group did not change their major, had identified clear occupational goals, and five of the seven students are currently employed in a field directly related to their educational program.

Five of the seven students in Group 1 indicated that their academic goal was a two-year degree, and two of the five achieved that goal. All but one of the students in this group reported that they had achieved or partly achieved their academic goal. All seven of the students reported that they had reached or made progress on their personal goal (either same as academic goal or job-related). Thus, although most of these students did not obtain a degree, both in terms of outcomes and their own perceptions, significant progress was made in terms of educational and career goals.

The presence of specific career goals for the successful group is a variable that has a positive relationship to student success (Beal and Noel, 1980). Super and others (1963) argue that if a definite vocational goal is not identified students are more likely to leave. This position is borne out by the finding that almost all of the students in the other three groups changed their major while at college and had indefinite career plans. Apparently students who have not identified career options may be frustrated and may have little, if any, commitment to college.

Career indecision was a key factor for students in Group 2 (non-successful, both by self-report and by college standards). These students reported a lack of positive relationships with other students, faculty and counselors. These students had especially negative feelings toward their instructors.

Another significant finding was made by those in Group 3 (college success, but not personal success), relating to their frustration over not having a clear educational or career objective. All of the students in this group indicated that they were planning for further education; therefore, the initial educational experience did not lead to goal attainment. As their career choice becomes clearer, they feel positive enough about the institution to return. Although not to the same degree as the students in Group 1, these students did achieve a similar level of academic and social integration. As described in Table 2, this group came closest to matching the persistence rate of students in Group 1. Their self-reported non-success was directly related to the high value placed on obtaining a two or four-year degree.

The most interesting and surprising results came from the students in Group 4 (unsuccessful by college standards, but self-reported personal success). Perhaps clarifying that college was not the most appropriate place for them to be, was in and of itself a "success" experience. These students were similar to those in Group 3 in that they generally reported positive relationships with faculty, counselors, and fellow students. In opposition to students in Group 3, however, they placed very low priority on academic success in general and degree completion in particular. Their primary, and perhaps only, reason for attending college was related to their occupational goal. These students' self-reported personal success was based on the fact that all three students had obtained a satisfying job, even though unrelated to their college studies.

Figure 1 summarizes the above discussion in terms of the relationship between student-defined success and academic/social integration. The students in Group 1 were successful by both college and self-reported standards and also reported the highest degree of academic and social integration. The students in Groups 3 and 4 also reported a moderate to high degree of academic integration. The students in Group 3 were successful by the college's GPA standard, but indicated a lack of personal success because of the high value accorded to degree completion. The students in Group 4, even though unsuccessful by institution standards, reported personal success due to their ability to find satisifying employment combined with relatively low value placed on academic success. The students in Group 2 were unsuccessful by both institutional and self-reported standards and achieved the lowest level of academic and social integration. The students in Groups1 and 2 are classic examples of Tinto's formulation. The students in Groups 3 and 4 are more difficult to evaluate in terms of academic and social integration because of their vastly different personal value systems. A key finding in terms of the methodology employed here is that this complexity and variability only emerged from the case studies rather than the previous quantitative analysis.

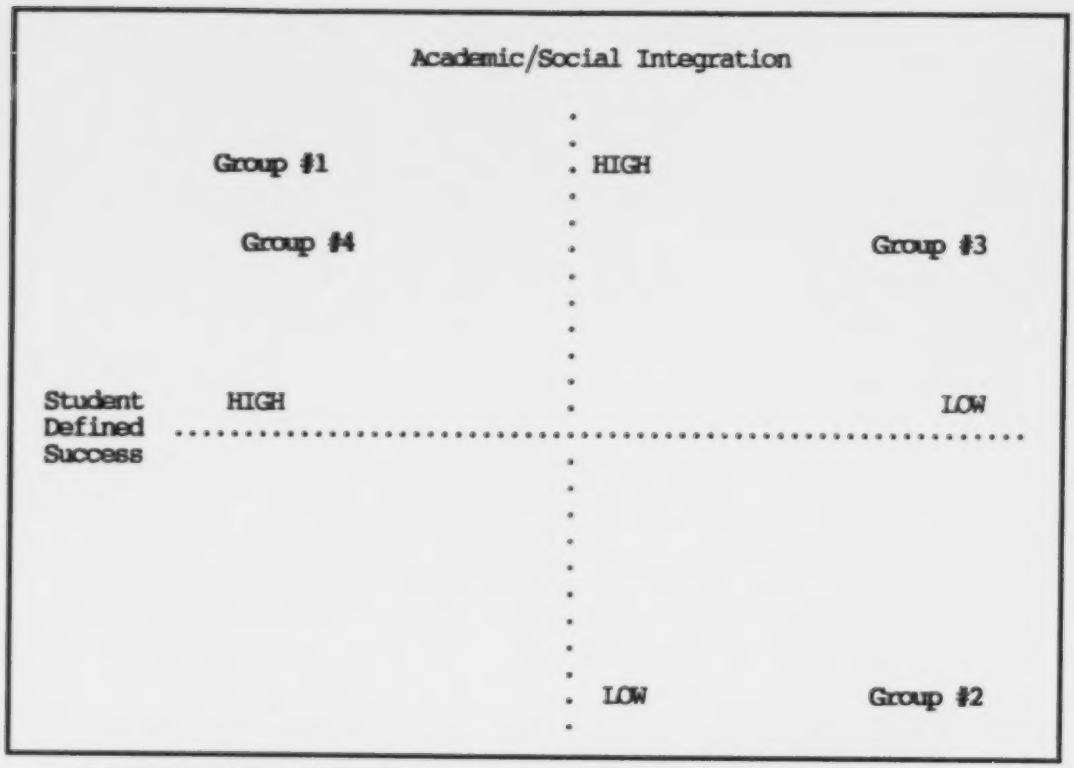

Figure 1. Spacial Depiction of Case Study Results with Regard to Student defined Success and Academic/Social Intergation

Implications

Although the findings reported here are consistent with Tinto's model, they are inconsistent with recent research on non-traditional students and community college students in particular. This research reports an independent relationship between persistence and academic/social integration. The case study approach used here, as opposed to the aggregate quantitative methodology used in previous studies, certainly is one factor explaining the differing results. Further, whereas the previously cited research focused on the larger student population, this study is restricted to academically underprepared students. That is, academic and social integration may play a more critical role for poorly prepared students than those who enter with better preparation. More importantly, however, the use of student intentions and self-reported success as an outcomes measurement tool helped in evaluating and explaining the observed outcomes, especially with regard to Groups 3 and 4. The findings suggest that academic and social integration are important predictors of student persistence for certain segments of the non-traditional student population, but less important for other segments. Academic and social integration have a strong influence on student persistence when the students have definite goals and share values with the institution.

All things considered, perhaps it is the feeling of acceptance, despite prior or current academic performance, and the reinforcement of one's possible potential that is so critical to this academically underprepared population. Community colleges recognize that a large portion of their student clientele is indeed not prepared for post-secondary level work. Many community college students have little, if any, encouragement to continue with educational pursuits. Thus, initial institutional and educational goal commitments, which have been found to be extermely significant determinants of educational outcomes, <u>are not significantly present</u> in this high risk population.

If students perceive that counselors, faculty, and staff members are genuinely interested in their academic and career goals, they will be more committed to the institution. An instrusive approach, such as Guided Studies, clearly displays to the student that he/she is of special interest to the institution, while at the same time maintaining the institution's commitment to access and opportunity along with excellence and accountability.

As a postscript, it should be noted that the methodology employed here also had the impact of an intervention. Following the structured interview, several of the students scheduled an appointment with a college counselor to discuss the possibility of returning to college. Thus, the very act of implementing the research design tended to confirm the conceptual foundation.

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Community College Journal for Research and Planning
Volume 7, Number 1

THE HIGH SCHOOL-COLLEGE CONNECTION: DUAL-CREDIT PROGRAMS

Karen Conklin and James M. Williams

The primary objectives of dual-credit programs are to smooth the transition from high school to college, shorten the time needed to earn an undergraduate degree, avoid unnecessary duplication of curricula, and improve the study habits, general academic readiness, and academic options for college-bound students. Additional benefits of such programs are to strengthen relationships among teachers and college faculty, provide teachers with new opportunities to keep up with developments in their academic disciplines, encourage collaborative curriculm development projects and research on effective instruction, and help college faculty keep abreast of the realities of educating today's secondary school students.

History of the High School/College Connection

In the 1880's the Massachusetts Teachers' Association passed two resolutions. One declared that the lack of cooperation between high schools and colleges was an "evil," and the second declared that increased cooperation between the schools and higher education would be a positive "good." As a result of these resolutions, the first high school-college meeting convened and established a national panel to bring together educators from both levels. This was the first of a number of meetings between 1893 and 1918 convened by the National Education Association. The report of The Committee of Ten, made up of college leaders, represented the first attempt to standardize the high school curriculum and coordinate secondary and postsecondary education (Stoel, 1988).

The acceptance of college entrance exams used by all colleges was slow in coming, although begun prior to the turn of the century. For many years, individual colleges continued to use their own tests to determine a student's preparedness. Obviously, attempts by high schools to adequately prepare students to gain acceptance and succeed in college without repeating academic work already mastered were hindered by the lack of national norms.

The Sputnik crisis brought a brief interlude of common sense and the first major governmental programs aimed at creative cooperation between high schools and colleges. The educational crisis abated with our successful ventures on the moon; cooperative programs were curtailed and finally dropped, and teaching itself became a most unpopular endeavor.

The mid-sixties proved to be a fertile time for innovations that sought to focus on individual growth and learning needs of students through high school-college connections. One of these resulting innovations was the concept of concurrent (or dual) enrollment.

Variations of the Concurrent Enrollment Theme

Concurrent (or dual) enrollment occurs when high school students enroll in college-level classes for simultaneous high school and college credit (Kleinrock, 1986). The innovator of this program type is Syracuse University's Project Advance which has received considerable attention in the literature since its inception in the early 1970's (Wilbur & Chapman, 1978; Mercurio et al, 1982; Wilbur et al., 1987).

Florida, Minnesota, New York and Oklahoma have already adopted various concurrent enrollment models. Each state has its own model and varying criteria for student selection. These criteria range from open access to all students on demand to more restrictive requirements negotiated between local school boards and colleges. None of the criteria have been challenged in the courts as inappropriate or in violation of individual rights (Greenberg, 1988).

Where public institutions are concerned, the funding of concurrent programs poses a final and serious legislative dilemma. Nearly all tax levy funding for both secondary and higher educa-

tion are predicated on some version of a headcount formula. The problem for legislatures and taxing/funding authorities is that in cases where students take classes for simultaneous high school and college credits, both college and high school may claim the student, opening the possibility for double funding claims.

Minnesota allows students to choose between applying their earned course credits to high school or to college graduation requirements—but not to both. New York has adopted several models for funding concurrent enrollment; such models simply double-fund the students. Florida has recently mandated the community colleges to develop working relationships with local schools and has developed a complicated system that allows monies to follow students, while simultaneously reimbursing local school districts for students claimed by community colleges (Greenberg, 1988).

College Now at Johnson County Community College

College Now at JCCC is a dual-enrollment program initiated in the fall of 1984 in which high school students who are enrolled in senior level honors or Advanced Placement (AP) classes may also earn college credit. Courses that reflect the college's content, objectives, and assignments are taught on the high school campus by qualified high school teachers.

When College Now was initiated, 14 courses were offered and eight high schools participated in the program. By spring of 1989, a total of 19 different courses were offered and 12 public and private high schools throughout the county participated. Each school selects only those course offerings which best meet the needs of their AP or honors students. All courses in the program also have AP exams.

Method of Operation

It is the responsibility of the high school to uphold college standards in these classes. In turn, JCCC provides high schools with room sets of textbooks and instructional materials upon request. Occasional on-site visits to high school classrooms enable the college staff to monitor the program and establish professional relationships with the teachers.

The college provides workshops for the high school teachers and invites them to attend professional development activities on campus. Each College Now teacher must submit a course outline at the start of every semester and, in many instances, the final exam utilized by JCCC faculty is also administered in the College Now class. These "common" exams are jointly developed by the high school and college faculty.

To help coordinate all activities related to the program, each high school assigns a person to function as a liaison between the high school and the college, usually one of the high school counselors. Likewise, JCCC has faculty in the various subject areas who serve as liaisons to the College Now teachers.

After enrollment in the program is completed, each College Now student is mailed a packet containing a student ID card, a calendar of College events, general information about JCCC, and a library card. Upon completion of College Now classes, students have regular college transcripts which are available to be mailed to other colleges and universities upon request.

JCCC charges the standard credit hour tuition rate to all College Now students and does not collect state reimbursement for these students. One-third of all tuition collected is returned to the school district. Several districts utilize these monies to fund innovative projects proposed by the faculty, thus providing additional benefits to both students and teachers.

A total of 287 students were enrolled in 1,444 credit hours when the College Now program was initiated at JCCC in the fall of 1984. By fall of 1988, headcount had grown to 734 (+155.7%) with a credit hour enrollment of 4,073 (+182.1%).

College Now courses reflect the names of the JCCC course offerings, which are not necessarily the course names utilized in the high schools offering the College Now dual credit in advanced placement/honors classes. For example, the language classes such as French I are the fourth year of French at the high school. (Table 1).

Table 1
College Now Courses Completed

Course	n	%
American national government	77	33.0
Analytic geometry/calculus I	85	36.5
Analytic geometry/calculus II	63	27.0
Biology	35	15.0
Chemistry I	27	11.6
Chemistry II	15	6.4
Composition I	121	51.9
Composition II	107	45.9
French I	29	12.4
French II	22	9.4
German I	9	3.9
Pascal	11	4.7
Spanish I	27	11.6
Spanish II	22	9.4
U.S. history to 1877	56	24.0
U. S. history since 1877	47	20.2

Note: Multiple response item, numbers and percentages are not additive.

The average number of College Now classes completed by respondents to the 1988 follow-up of former College Now students was 3.23. Over 25 percent of respondents had completed five or more classes, giving them the option of transferring a semester or more of college credits upon graduation from high school.

Despite the tuition reimbursement to participating school districts, room sets of textbooks, and other miscellaneous operating expenses, JCCC has consistently shown a profit from the College Now program. Over the past year the profit realized from College Now has doubled, reflecting the substantial increase in both student headcount and credit hour enrollment.

Follow-up of Former College Now Students

Each fall follow-up studies of that year's high school graduates who had participated in College Now have been conducted to address such issues as the transfer of credit to other colleges and universities, quality of instruction, perception of JCCC, satisfaction with the program, and other questions related to involvement in College Now. Response rates have been nearly 50 percent for all four years these follow-up studies have been conducted.

Methodology. Surveys are mailed to the home addresses of all former College Now students who graduated during the preceding year just prior to the Thanksgiving holiday, with a follow-up mailing the middle of December when final exams are concluding. Cover letters signed by the dean of instruction or academic vice president accompany these surveys.

Summary of Results. The vast majority of former College Now students go on to college immediately after high school and are educationally ambitious. Over 97 percent of respondents to the 1988 follow-up study were currently enrolled as full-time students. Nearly three out of four intended to pursue a graduate degree; 26.5 percent planned to earn a doctorate or professional degree.

Nine out of ten 1988 respondents were satisfied with the overall College Now program. The majority also indicated satisfaction with other aspects of the College Now experience, with the exception of their involvement with JCCC while participating in College Now. Despite several invitations to participate in campus activities, few high school students involve themselves in JCCC events or make use of campus facilities. (Table 2).

Table 2
Satisfaction with College Now Experience

Item	Satisfied	Mean[b]
Overall satisfaction	90.6%	4.41
Quality of instruction in College Now classes	86.8	4.51
Content of College Now courses	90.6	4.49
Attitude of high school teachers toward College Now	84.2	4.38
Attitude of high school counselors toward College Now	71.4	4.10
Dissemination of College Now Information	70.9	3.93
Involvement with JCCC	44.0	3.39

Note: n=234.
[a]Percent displayed as satisfied combines responses of "very satisfied" and "satisfied."
[b]Response scale ranged from 1 (very dissatisfied) to 5 (very satisfied).

Reasons former College Now students select one college over another tend to be consistent year after year with location, availability of a preferred major, and cost the three most influential factors. Nearly half of the 1988 respondents also indicated the prestige of the college and its reputation were factors which influenced their choice. (Table3).

Table 3
Reasons for College Selection

Item	n	%
Location	171	75.3
Program (offered major student wanted)	147	64.8
Finances (less expensive)	136	59.9
Prestige (could take pride in attending)	107	47.1
Reputation (best college for desired major)	105	46.3
Assistance (offered scholarship)	89	39.2
Social life (where friends were going)	60	26.4
Athletic program (wanted to participate)	21	9.3
Other	33	14.5

Note: Multiple response item; numbers and percentages are not additive.

Nearly three out of four 1988 respondents indicated they felt better prepared for college as a result of their College Now experience. Only one in six respondents felt a similar course in which they were enrolled at their college was harder than the College Now class completed in high school. Nearly all respondents indicated they would recommend College Now to their friends. (Table 4).

Table 4
Results of College Now Experience

Item	n	%
Effect of College Now experience		
Better prepared for college	166	71.9
Not better prepared	32	13.9
Unsure	29	12.6
Unknown	4	1.7
Comparison of College Now course with current course in same discipline		
Harder than College Now	39	16.9
About the same as College Now	57	24.7
Easier than College Now	24	10.4
Unknown	111	48.1
Would recommend College Now to friends		
Yes	226	96.6
No	6	2.6
Unknown	2	.9

College Now credits transferred course-for-course for 87.5 percent of 1988 respondents, and as electives for another 4.3 percent. About one in four respondents were attending out-of-state schools. Nearly 40 universities outside of Kansas (where articulation agreements are in place) were identified by respondents as accepting College Now credits—only five universities were identified as not accepting College Now credits. Previous follow-up studies of former College Now students elicited similar results.

Conclusions and Recommendations

College Now and similiar dual-credit offerings nationwide are successful, growing programs which help to bridge the gap between secondary and postsecondary education. These programs seek to create opportunities and real incentives for high school students to work hard academically, to "test the waters" before full-time college study, to explore various career options, and to understand the commitment necessary to be succesful in a given field.

Students participating in the College Now program at JCCC have consistently displayed a high level of satisfaction with all aspects of the program, with the exception of involvement with the College itself. Over 90 percent indicated the College Now credits transferred to the college or university they were attending at the time the follow-up study was conducted.

Respondents to each of the four follow-up studies conducted thus far indicated they were better prepared for future college courses, not only because they had a head start on earning college credits, but also because they had a preview of what to expect in college. Typical comments were:

> *"College Now classes were much more demanding than many other classes because assignments forced interpretation and evaluation. They required more thought, were more advanced, and prepared me for college better than any other high school classes."*
>
> *"The College Now program through the high schools is the best opportunity that high schools could offer. It takes the scare of college classes away and allows the student to get a head start on college. It also gives students a reason not to slack off toward the end of their high school career!"*

Further study is suggested, particularly cooperative efforts among colleges utilizing dual-credit programs for comparative purposes, and longitudinal studies to ascertain the long-term effects of participation in dual-credit programs on the postsecondary experiences and successes of former students.

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Community College Journal for Research and Planning
Volume 7, Number 1

A STUDY OF STAFF PERCEPTIONS OF INSTITUTIONAL GOALS BEFORE AND AFTER A MAJOR INSTITUTIONAL MISSION CHANGE

Fred H. Martin and Jerry W. Hardin

History

Pellissippi State Technical Community College (PSTCC) is the newest of eleven public community colleges in Tennessee, having been created in July 1988 by the General Assembly. The college had previously been known as State Technical Institute at Knoxville (STIK), offering two-year technical programs designed for immediate entry into the workforce.

The major change in mission that accompanied the name change consisted of the addition of university parallel programs designed for transfer. The mission expansion has had an extensive impact on many areas of the college, including enrollment, curriculum, staffing, budget, and facilities.

Enrollment grew from 2221 in Fall 1987 to 3261 in Fall 1988 (an increase of 47%). Almost forty new university parallel programs were added, along with about thirty new faculty and several administrative/support staff. All of these major changes occurred during a four-month period from May to August 1988.

As part of the plan for mission and program expansion, twenty-six faculty and other staff were transferred to PSTCC from Roane State Community College (RSCC), a neighboring college which had offered university parallel programs in Knox County prior to Fall 1988. This sudden and significant mission, curriculum, and staffing change led to a comparative and longitudinal study of staff attitudes toward institutional goals.

Purpose

The purpose of the study was to: (1) ascertain faculty and staff perceptions about current (1988) college goals; (2) elicit faculty and staff opinions about what should be the college goals; (3) identify any changes from the 1986 faculty and staff perceptions about goals; and (4) compare local college views about goals with national norms.

After a search of the literature and discussions with professional colleagues, it was decided that the most appropriate measure would be the Community College Goals Inventory (CCGI), a standardized instrument developed by the Educational Testing Service (ETS). The CCGI consists of 20 goal areas, divided into outcome and process goals (Appendix A). One reason for selecting the CCGI was the availability of comparative CCGI data from STIK staff in Spring 1986. Using the CCGI, it was possible to discern changes in perceptions in former STIK staff as they merge into the new institution.

Methodology

Hypotheses

The null hypotheses tested were as follows:

Hypothesis I — There are no significant differences between the 1986 baseline means for each of the twenty goal areas in both the "is a goal" and the "should be a goal" categories and the 1988 PSTCC means in each of the categories/goal areas.

Hypothesis II — There are no significant differences between the 1988 total means for each of the twenty goals areas in both the "is a goal" and the "should be a goal" categories and the FORMER STIK FACULTY means in each of the categories/goal areas.

Hypothesis III — There are no significant differences between the 1988 total means for each of the twenty goal areas in both the "is a goal" and the "should be a goal" categories and the FORMER RSCC FACULTY means in each of the categories/goal areas.

Hypothesis IV	There are no significant differences between the 1988 total means for each of the twenty goal areas in both the "is a goal" and the "should be a goal" categories and the OTHER NEW FACULTY means in each of the categories/goal areas.
Hypothesis V	There are no significant differences between the 1988 total means for each of the twenty goal areas in both the "is a goal" and "should be a goal" categories and the PRESENT PSTCC SUPPORT STAFF means in each of the categories/goal areas.
Hypothesis VI	There are no significant differences between the 1988 total means for each of the twenty goal areas in both the "is a goal" and "should be a goal" categories and the PRESENT PSTCC ADMINISTRATION means in each of the categories/goal areas.
Hypothesis VII	There are no significant differences between the means for the twenty goal areas of a national comparative group and the 1986 totals.
Hypothesis VIII	There are no significant differences between the means for the twenty goal areas of a national comparative group and the 1988 totals.

The Community College Goals Inventory (CCGI) was administered to the employees of STIK in the Spring of 1986. The results of that survey to those eighty employees served as the baseline data with which the 1988 PSTCC totals were compared.

Responses from faculty, staff, and administration were combined. Means and standard deviations were computed for both the "is a goal" and "should be a goal" category. For the 1988 administration the same data were reported; however, the 115 employee responses were segmented into subgroups of FORMER STIK FACULTY (N=38), FORMER RSCC FACULTY (N=11), OTHER NEW FACULTY (N=9), SUPPORT STAFF (N=25), and ADMINISTRATION (N=28). Four respondents indicated no subgroup and were included in the testing of Hypothesis I only.

A T-Test was used to test for significance for Hypotheses I, II, V, VI, VII and VIII. Because of the small sample size of two subgroups, Chi Square was used to test for signifiance for Hypotheses III and IV.

Results

The means of each goal area by groups and subgroups is shown in Table 1. The bold figures indicate a statistically significant difference at the five percent level when compared to the specific population described in the hypotheses. Note that the appropriate hypothesis is indicated at the top of each column in the table.

Table 2 lists the relative rankings of means of each goal area in the three categories of "is a goal", "should be a goal", and the difference between those means or "discrepancy". The "is" ranking indicates the staff's perception of each goal area's present relative importance. The "should be" ranking reflects each respondent's value system and produces an aggregate view of which goal areas the institution should be emphasizing. The discrepancy ranking is a simple arithmetic subtraction of the "is" mean from the "should be" mean. The greater difference indicated, the higher the discrepancy ranking. Without exception, every difference was positive, which indicates that the staff believes that more emphasis should be given to every goal area.

The highest ranked "is" and "should be" individual goal statements out of the total 97 statements are listed in Tables 3, 4, and 5. These tables include all statements while Table 5 includes only those local goal statements which were not compiled into any goal area. The top ten "discrepancies" in magnitude from among the 97 individual statements are listed in Table 6.

When the total 1986 employee responses are compared with the total 1988 employee responses, a significant difference was indicated in fourteen of the twenty "is a goal" areas. In almost all of the differences the 1988 means were higher than the 1986 or baseline means. For the purposes of this study a significant difference indicates a higher 1988 total or subgroup mean than the total mean unless otherwise specified. Hypothesis I was rejected for the 24 goal areas, since there were significant differences in ten (with two lower) of the twenty, "should be a goal" areas.

Table 1:CCGI
PSTCC—Fall 1988

Note: Bold figures denote significant difference.

Table of means for each goal area including both the "Is" and the "Should Be" categories.

	Total 1988 Ho 1		STIK (former) Ho 2		RSCC (former) Ho 3		Other (former) Ho 4		Support Staff Ho 5		Administrative Ho 6		Total 1986 HO 7		Total 1988 Ho 8	
	IS	SB	IS	SB	IS	SB	IS	SB	IS	SB	IS	SB	IS	SB	IS	SB
General Education	3.77	4.40	3.90	4.32	3.89	4.66	3.69	4.47	3.58	4.39	3.70	4.44	3.34	4.13	3.77	4.40
Intellectual Orientation	3.25	4.22	3.41	4.33	3.14	4.34	3.06	4.31	3.03	4.00	3.32	4.22	3.08	4.08	3.25	4.22
Lifelong Learning	3.19	3.89	3.22	3.78	3.66	4.02	3.33	3.61	3.01	3.91	3.08	4.04	2.93	3.84	3.19	3.89
Cultural/Aesthetic Awareness	2.30	3.11	2.25	2.85	2.55	3.48	2.47	3.44	2.36	3.17	2.17	3.16	1.57	2.09	2.30	3.11
Personal Development	2.98	3.90	3.13	4.06	3.02	3.91	3.16	3.77	2.73	3.74	2.90	3.83	2.76	3.79	2.98	3.90
Humanism/Altruism	2.48	3.58	2.54	3.62	2.82	3.84	2.72	3.86	2.37	3.33	2.29	3.55	2.13	3.06	2.48	3.58
Vocational/Technical Preparation	3.94	4.27	4.01	4.45	4.18	4.20	3.94	3.89	3.78	4.21	3.84	4.21	3.89	4.55	3.94	4.27
Development/Remedial Preparation	3.75	4.24	3.71	4.25	3.89	4.34	3.64	4.11	3.67	4.19	3.86	4.27	3.63	4.42	3.75	4.24
Community Services	3.06	3.60	3.02	3.52	3.56	3.80	3.17	3.53	2.96	3.41	3.04	3.84	2.56	3.47	3.06	3.60
Social Criticism	2.45	3.18	2.40	3.06	2.93	3.75	2.56	3.67	2.52	2.99	2.29	3.12	1.99	2.53	2.45	3.18
Counseling and Advising	3.44	4.12	3.61	4.16	3.57	4.07	3.42	3.94	3.21	4.09	3.43	4.21	3.33	4.16	3.44	4.12
Student Services	2.95	3.84	2.97	3.80	2.93	3.98	3.05	3.71	2.81	3.86	3.04	3.94	2.62	3.50	2.95	3.84
Faculty/Staff Development	2.81	4.14	2.60	4.26	3.18	4.14	3.22	4.25	2.83	3.95	2.85	4.19	2.66	4.12	2.81	4.14
Intellectual Environment	2.63	3.81	2.53	3.77	2.98	3.86	2.78	3.67	2.70	3.73	2.52	3.98	2.23	3.38	2.63	3.81
Innovation	2.64	3.58	2.55	3.75	3.02	3.61	2.83	3.58	2.62	3.29	2.62	3.60	2.55	3.60	2.64	3.58
College Community	2.72	4.31	2.45	4.57	3.48	4.25	3.00	4.08	2.75	4.16	2.80	4.20	2.39	4.35	2.72	4.31
Freedom	2.78	3.36	2.82	3.46	3.23	4.09	2.97	3.78	2.70	3.16	2.67	3.12	2.44	2.90	2.78	3.36
Accessibility	3.49	3.79	3.60	3.86	3.75	3.52	3.38	3.81	3.35	3.80	3.46	3.89	3.30	3.75	3.49	3.79
Effective Management	3.28	4.10	3.09	4.25	3.68	3.91	3.53	3.91	3.23	4.04	3.40	4.17	2.97	4.14	3.28	4.10
Accountability	3.38	3.97	3.38	4.11	3.80	3.86	3.44	3.72	3.33	3.92	3.27	3.96	3.09	3.99	3.38	3.97

Table 2: CCGI
PSTCC—Fall 1988

The perception of the 115 respondents for the "Is" and "Should Be" categories, and the distance or discrepancy between the two.

Goal Area Ranked by "Is a Goal" Means	Goal Area Ranked by "Should be a Goal" Means	Goal Area Ranked by Discrepancies Between the Two
1. Vocational/Technical Preparation	1. General Education	1. College Community
2. General Education	2. College Community	2. Faculty/Staff Development
3. Remedial/Developmental	3. Vocational/Technical Preparation	3. Intellectual Environment
4. Accessibility	4. Remedial/Developmental	4. Humanism/Altruism
5. Counseling/Advising	5. Intellectual Orientation	5. Intellectual Orientation
6. Accountability	6.Faculty/Staff Development	6. Innovation
7. Effective Management	7. Counseling/Advising	7. Personal Development
8. Intellectual Orientation	8. Effective Management	8. Student Services
9. Life-long Learning	9. Accountability	9. Effective Management
10. Community Services	10. Personal Development	10. Cultural Aesthetic Awareness
11. Personal Development	11. Life-long Learning	11. Social Criticism
12. Student Services	12. Student Services	12. Life-long Learning
13. Faculty/Staff Development	13. Intellectual Environment	13. Counseling/Advising
14. Freedom	14. Accessibility	14. General Education
15. College Community	15. Community Services	15. Accountability
16. Innovation	16. Humanism/Altruism	16. Freedom
17. Intellectual Environment	17. Innovation	17. Community Services
18. Humanism/Altruism	18. Freedom	18. Remedial/Developmental
19. Social Criticism	19. Social Criticism	19. Vocational/Technical Preparation
20. Cultural/Aesthetic Awareness	20. Cultural/Aesthetic Awareness	20. Accessibility

Table 3: CCGI
PSTCC—Fall 1988

Is a Goal

Rank order of top twenty of 97 individual goal statement means

Rank	Mean	Statement
1.	4.07	4. to ensure that students who graduate have achieved some level of reading, writing, and math competency
2.	4.05	26. to provide opportunities for students to prepare for specific vocational/technical careers, such as bookkeeping, computer technology, and cosmetology
3.	4.04	31. to ensure that students who complete developmental programs have achieved appropriate reading, writing, and mathematics competencies
4.	4.02	27. to identify and assess basic skills levels and then counsel students relative to their needs
5.	3.96	36. to provide opportunities for individuals to update or upgrade present job skills...
6.	3.95	38. to provide retraining opportunities for individuals who wish to qualify for new careers or acquire new job skills...
7.	3.92	1. to ensure that students acquire a basic knowledge of communications, the humanities, social sciences, mathematics, and natural sciences...
8.	3.85	11. to be committed as a college to provide learning opportunities to adults of all ages
9.	3.79	30. to offer educational programs geared to new and emerging career fields...
10.	3.76	86. to seek to maintain high standards of academic performance throughout the institution...
11.	3.71	70. to offer programs at off-campus locations and at times that accommodate adults in the community...
12.	3.71	87. to be accountable to funding sources for the effectiveness of college programs...
13.	3.71	41. to evaluate continuously the effectiveness of basic skills instruction...
14.	3.70	77. to maintain or move to a policy of essentially open admissions, and then to develop worthwhile educational experiences for all who are admitted...
15.	3.65	44. to provide career counseling services for students
16.	3.59	6. to provide a general academic background as preparation for further, more advanced, or specialized work...
17.	3.57	2. to teach students methods of inquiry, research, and problem definition and solution...
18.	3.56	48. to provide comprehensive advice for students about financial aid sources...
19.	3.52	81. to provide regular evidence that the institution is actually achieving its stated goals...
20.	3.50	75. to be organized for systematic short-and long-range planning for the whole institution...
20. (tie)	3.50	78. to engage in systematic evaluation of all college programs...

Table 4: CCGI
PSTCC—Fall 1988

Should be a Goal

Rank order of top twenty of 97 individual goal statement means.
* Indicates also in top ten discrepancies.

Rank	Mean	Statement
1.	4.71	4. to ensure that students who graduate have achieved some level of reading, writing, and math competency
2.	4.54	*65. to maintain a climate of mutual trust and respect among students, faculty, and administrators...
3.	4.52	86. to seek to maintain high standards of academic performance throughout the institution...
4.	4.46	*59. to maintain a climate in which communication throughout the organizational structure is open and candid...
5.	4.44	31. to ensure that students who complete developmental programs have achieved appropriate reading, writing, and mathematics competancies
6.	4.43	1. to ensure that students acquire a basic knowledge of communications, the humanities, social sciences, mathematics, and natural sciences...
7.	4.42	*63. to create an institution known in the community as an intellectually exciting and stimulating place
8.	4.39	50. to provide academic advising services for students...
9.	4.38	*68. to involve those with appropriate expertise in making campus decisions...
10.	4.38	49. to evaluate faculty in an appropriate and reasonable manner in order to promote effective teaching...
11.	4.35	27. to identify and assess basic skills levels and then counsel students relative to their needs...
12.	4.30	2. to teach students methods of inquiry, research, and problem definition and solution...
13.	4.29	11. to be committed as a college to providing learning opportunities to adults of all ages...
14.	4.29	9. to ensure that students acquire knowledge and skills that will enable them to live effectively in society...
15.	4.26	8. to seek to instill in students a commitment to a lifetime of learning...
16.	4.25	41. to evaluate continuously the effectiveness of basic skills instruction...
17.	4.21	10. to instill in students a capacity for openness to new ideas and ways of thinking...
18.	4.20	7. to develop students' ability to synthesize knowledge from a variety of sources...
19.	4.19	5. to increase the desire and ability of students to undertake self-directed learning
20.	4.18	6. to provide a general academic background as preparation for further, more advanced or specialized work...

Table 5: CCGI
PSTCC—Fall 1988

Rank order of the seven local goal statements.

"Is a Goal"			"Should be a Goal"			
Rank	Mean	Statement	Rank	Mean	Rank	Discrepency or Difference
1.	3.32	92. to develop the Blount County site into a full-service campus (including a complete college transfer program, library, services, etc.)	1	3.83	4.	+.51
2.	2.83	91. to develop the Downtown/ Division Street site into a full-service campus (including a complete college transfer program, library, services, etc.)	2.	3.25	6.	+.44
3.	2.36	95. to expand off-campus courses and and services in the downtown Knoxville/central city area.	7.	2.62	7.	+.26
4.	2.32	*93. to expand off-campus courses and services in the North Knoxville/Knox County Area	4.	2.87	2.	+.55
5.	2.29	*94. to expand off-campus courses and services in the East Knoxville/Knox County Area.	5.	2.81	3.	+.52
6.	2.25	*96. to provide off-campus instruction via instructional television, cable TV, microwave, etc.	3.	2.96	1.	+.71
7.	2.19	*97. to develop an inter-collegiate athletic program.	6.	2.67	5.	+.48

Table 6: CCGI
PSTCC—Fall 1988

Rank order of the top ten goal statement discrepancies.

Rank	Difference	Goal Statement
1.	+1.84	65. Maintain a climate of mutual trust and respect among students, faculty, and administrators.
2.	+1.81	59. Maintain climate where communication throughout organizational structure is open/candid
3.	+1.64	53. Provide flexible leave and sabbatical opportunities for faculty, staff, and professional development
4.	+1.62	68. To involve those with appropriate expertise in making important campus decisions
5.	+1.59	52. Operate student health service including health maintenance, preventative medicine, and referral service
6.	+1.50	62. Maintain climate at college where differences of opinion can be aired openly and amicably
7.	+1.40	43. To commit college resources to faculty and staff development activities
8.	+1.37	63. Create an institution known in the community as an intellectually exciting and stimulating place
9.	+1.25	25. Encourages students to have an active concern for the general welfare of their communities
10.	+1.25	8. Teach students to "learn how to learn" so they can continue learning throughout their lives

Five subgroups of PSTCC employees were then compared to the 1988 total data in the testing of null Hypotheses II - VI with the following results:

The **FORMER STIK FACULTY** differed from the total in none of the 20 "is" areas but did differ in two of the "should be" areas (Vocational/Technical Preparation and College Community).

The **FORMER RSCC FACULTY** differed from the total in 19 (with two lower) of the "is" areas and in 9 (with one lower) of the "should be" areas.

The **OTHER NEW FACULTY** differed from the total in 16 (with five lower) of the "is" areas and in 15 (ten lower) of the "should be" areas.

The **PSTCC SUPPORT STAFF** differed from the total in one (with one lower—Personal Development) of the "is" areas and one (with one lower—Innovation) of the "should be" areas.

The **PSTCC ADMINISTRATION** differed from the total in none of the 20 "is" areas but did differ in one of the "should be" areas (Community Services).

Hypotheses II, III, IV, V and VI were rejected as stated since there were differences between each of the groups and the 1988 total data. Hypotheses VII and VIII were also rejected when a comparison was made between the means of a national community college sample (N=6539) and both the 1986 total means (N=80) and the 1988 total (N=115). The 1986 totals differed significantly in 15 of the "is" categories and 11 of the "should be" categories for a total of 26 significant differences when compared with the national means. The 1988 totals also differed significantly in 10 of the "is" categories and 9 of the "should be" categories for a total of 19 significant differences.

Summary and Conclusions

The comparisons of the 1986 STIK faculty and staff to the 1988 PSTCC faculty and staff indicated significant differences in 24 of the 40 goal areas. Overall, the 1988 means were higher in the "is a goal" areas and higher in all but two of the "should be a goal" areas. This indicates that considerable progress was made in most goal areas since 1986 and that even more emphasis should be placed on most goal areas.

There were two exceptions which suggested that less relative emphasis should be placed on vocational/technical preparation and remedial/developmental preparation. The word "relative" should be noted since those two areas are still in the top four "should be a goal" rank ordering of institutional goals.

The comparisons which were made between the 1988 totals and the subgroups yielded several significant differences. As a whole, there were few (five total) significant deviations from the means by the three subgroups consisting of former STIK faculty, support staff, and administration.

Most (fifty-nine) of the significant differences occurred in two groups—former RSCC faculty and other new faculty. These two groups may not have unduly influenced the total\means because of their small number (20 of 115 total), but the complexity of the institution should change in the long term because of these different perceptions and values. This trend is evident as indicated by the fewer significant differences in the 1988 totals than the 1986 totals when both are compared to the same national norm.

The national norm means were compared to both the 1986 total means and the 1988 total means, resulting in 26 and 19 significant differences, respectively. It may be concluded that, as the faculty and staff have increased in size, complexity, and maturity and as the college's mission has expanded, their perceptions have moved closer to the national norm for community colleges. This trend might be expected to continue in the future.

The college should use these results of faculty and staff perceptions in any future strategic planning, operational goal setting, and any revision of present goals. College administrators should compare existing strategic and operational goals with the list of highly ranked "should be" goals to determine if proper emphasis is being placed on those areas.

The college should also use these results as professional development activities are planned; however, the institution must define its intentions when trying to change staff perceptions. A decision must be made as to how much diversity is desirable, and the institution should not try to change that which a dynamic institution needs for renewal.

As the college further matures and incorporates the university parallel mission, staff perceptions of institutional goals should continue to be monitored and used for improving institutional effectiveness.

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APPENDIX A

Descriptions of the 20 Goal Areas in the Community College Goals Inventory

OUTCOME GOALS

General Education—has to do with acquisition of general knowledge, achievement of some level of basic competencies, preparation of students for further, more advanced work, and the acquisition of skills and knowledge to live effectively in society. (1,4,6,9,)*

Intellectual Orientation—relates to an *attitude* about learning and intellectual work. It means familiarity with research and problem solving methods, the desire and ability for self-directed learning, the ability to synthesize knowledge from many sources, and an openness to new ideas and ways of thinking. (2,5,7,10)

Lifelong Learning—means providing courses to community adults so they can pursue a variety of interests, instilling in students a commitment to a lifetime of learning, providing learning opportunities to adults of all ages, and awarding degree credit for knowledge and skills acquired in nonschool settings. (3,8,11,13)

Cultural/Aesthetic Awareness—entails a heightened appreciation of a variety of art forms, encouraging study in the humanities and art beyond requirements, exposure to non-Western art and literature, and encouragement of student participation in artistic activities. (14,17,20,23)

Personal Development—means identification by students of personal goals and the development of ways of achieving them, enhancement of feelings of self-worth, self-confidence, and self-direction, and encouragement of open and honest relationships. (15,18,21,24)

Humanism/Altruism—reflects a respect for diverse cultures, a commitment to working for peace in the world, an understanding of the important moral issues of the time, and concern about the general welfare of the community. (16,19,22,25)

Vocational/Technical Preparation—means offering specific occupational curricula (such as accounting or air conditioning and refrigeration), programs geared to emerging career fields, opportunities for upgrading or updating present job skills, and retraining for new careers or new job skills.(26,30,36,38)

Developmental/Remedial Preparation—includes recognizing, assessing, and counseling students with basic skills needs, providing developmental programs that recognize different learning styles and rates, assuring that students in developmental programs achieve appropriate levels of competence, and evaluating basic skills programs. (27,31,32,41)

Community Services—is concerned with the college's relationship with the community: encouraging community use of college resources (meeting rooms, computer facilities, faculty skills), conducting community forums on topical issues, promoting cooperation among diverse community organizations to improve availability of services, and working with local government agencies, industry, unions, and other groups on community problems. (28,34,35,37)

Social Criticism—means providing critical evaluation of current values and practices, serving as a source of ideas to change social institutions, helping students learn how to bring about change in our institutions, and being engaged, as an institution, in working for needed changes in our society. (29,33,39,40)

PROCESS GOALS

Counseling and Advising—means providing career counseling services, personal counseling services, and academic advising services for students and providing a student job-placement service. (44,47,50,51)

Student Services—means developing support services for students with special needs, providing comprehensive student activities program, providing comprehensive advice about financial aid sources, and making available health services that offer health maintenance, preventive medicine, and referral services. (42,45,48,52)

Faculty/Staff Development—entails commitment of college resources to provide opportunities and activities for professional development of faculty and staff, appropriate faculty evaluation to improve teaching, and flexible leave and sabbatical opportunities for faculty and staff. (43,46,49,53)

Intellectual Environment—means a rich program of cultural events, a college climate that encourages student free-time involvement in intellectual and cultural activities, and one in which students and faculty can easily interact informally, and a college that has a reputation in the community as an intellectually exciting place. (54,57,60,63)

Innovation—is defined as a climate in which continuous educational innovation is an accepted way of life. It means established procedures for readily initiating curricular or instructional innovations, and, more specifically, it means experimentation with new approaches to individualized instruction and to evaluating and grading student performance. (55,58,61,64)

College Community—is defined as fostering a climate in which there is faculty and staff commitment to the goals of the college, open and candid communication, open and amicable airing of differences, and mutual trust and respect among faculty, students, and administrators. (56,59,62,65)

Freedom—has to do with protecting the right of faculty to present controversial ideas in the classroom, not preventing students from hearing controversial points of view, placing no restrictions on off-campus political activities by faculty or students, and ensuring faculty and students the freedom to choose their own life-styles. (66,69,73,76)

Accessibility—means maintaining costs to students at a level that will not deny attendance because of financial need, offering programs that accommodate adults in the community, recruiting students who have been denied, have not valued, or have not been successful in formal education, and, with a policy of open admission, developing worthwhile educational experiences for all those admitted. (67,70,74,77)

Effective Management—means involving those with appropriate expertise in making decisions, achieving general consensus regarding fundamental college goals, being organized for systematic short- and long-range planning, and engaging in systematic *evaluation* of all college programs. (68,72,75,78)

Accountability—is defined to include consideration of benefits in relation to costs in deciding among alternative programs, concern for the efficiency of college operations, accountability to funding sources for program effectiveness, and regular provision of evidence that the college is meeting its stated goals. (79,81,83,87)

*The numbers in parentheses are the four goal statements that make up each goal area.

Miscellaneous goal statements not included in goal areas (12,71,80,82,84,85,86,88,89,90)

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CURRENT ISSUES IN COMMUNITY COLLEGE RESEARCH

Planning is essential to developing a quality educational program to serve the needs of diverse students in a dynamic changing environment. "Planning for Results" by John Quinley outlines how Central Piedmont Community College involved college faculty, staff, and administrators in speculating about what issues impact most on the future of the college. The planning guide is comprehensive enough to reflect the broad scope of the college and yet simple enough not to lose sight of the essential elements of strategic and operational planning.

The question of what happens to students after they leave college is not new, but one which is becoming increasingly important. Beth Lee reports on the results of a follow-up study of more than 7,500 students in California's Los Rios District. The survey population included all graduates and certificate earners as well as a cohort of non-graduates.

As the future becomes more uncertain and planners and administrators face the possibility of potential enrollment decline, new techniques for planning are being investigated. Environmental scanning, a technique used by corporations can be adapted for use by community colleges to improve planning and decision making. Craig Clagett at Prince George's Community College describes how this technique can be made applicable to colleges with limited resources.

PLANNING FOR RESULTS: A GUIDE IN PLANNING DEVELOPED BY CENTRAL PIEDMONT COMMUNITY COLLEGE

John Quinley

Introduction

Worthwhile planning focuses on results and not on the mechanics of planning. Careful planning helps to build a brighter future for students and provides a framework for the improvement of the institution's programs. Plans must be flexible or they become obstacles. They can stifle rather than encourage creativity; leave little room for intuition; and make risk taking too risky.

Planning must create an environment that enables the college to provide the most desirable future options for the students. To go beyond the plan requires trust and commitment that ideas will receive a fair hearing; accepted ideas will receive adequate resources; unsuccessful projects will be assessed, revised or discontinued; and planning will have direct benefit for the students.

Institutional planning has helped Central Piedmont Community College (CPCC) make more right choices for the future and has provided a general framework within which to exercise ingenuity while working together to fashion CPCC's future. The planning guide developed for the college provides a structure and process for this effort. It is comprehensive enough not to lose sight of the basic common sense nature of planning while providing for continuous planning activities from year to year and is intended to facilitate change and make revisions which will foster institutional improvement.

The concept of assessing institutional effectiveness, as defined by the Southern Association of Colleges and Schools has changed. In the past, it was sufficient to initiate appropriate educational and administrative processes that were designed to meet educational goals. For example, the goal of providing a general education foundation for graduates was met by requiring a core curriculum of general education classes.

The new criteria no longer assume that goals are met if appropriate procedures are initiated. The new criteria stipulate that an institution must:

- Define its expected educational results
- Describe how the achievement of the results will be ascertained
- Develop procedures for evaluating results
- Use the results of these evaluations to improve institutional effectiveness

The principle focus of institutional effectiveness is student outcomes. Areas such as management processes and organizational climate are also important.

Though effectiveness measures will vary across divisions and departments, the processes used for recording and reporting data should be consistent. Institutions are encouaged to use a variety of innovative and creative approaches to assessment, including both quantitative and qualitative methods.

However, the substance, revelance, and utility of evaluation procedures are more important than the specific evaluation methods used. Without a firm commitment to use evaluation results, previous steps in the planning and evaluation process are little more than futile exercises. At CPCC, this commitment is clear.

Elements of the Planning Process

CPCC's institutional planning process involves both strategic and operational planning. These two types of planning involve several elements. Figure 1 provides an illustration of the institutional planning model at CPCC. It shows both the relationship among College mission, environmental assessment, and institutional assessment and the process by which strategic planning leads to operational activities. After the initial planning year, the cycle continues with last year's assessment becoming input for next year's plans.

Strategic Planning

Although strategic planning is based on extensive input from throughout the institution, the responsibility for setting strategic direction is largely an administrative and board task. Strategic planning outlines major institutional goals that have been identified through the planning process. An important outcome is a shared sense of institutional direction that supports adjustments to changing conditions and provides foundation for prioritizing the use of existing resources.

Institutional goals are derived from an understanding of the interrelationships among the institutional values and mission, environmental opportunities and constraints, and institutional strengths and weaknesses. These interactions are expressed as a set of planning assumptions. Strategic planning does not spell out every goal and objective, every strategy or activity which should or will occur at the College. Strategic plans should be viewed as a framework for decision-making and development, not a strait-jacket.

Mission/Values Assessment

Educational institutions reflect certain value choices in their mission and methods of operation. These values constitute a rationale for the institution: a set of decisions about clientele, about institutional functions and responsibilities, about educational process, and about the working relationships of the staff.

An institution demonstrates its effectiveness through the accomplishment of goals and expected educational results that are clearly linked to the institution's stated purpose or mission. Mission statements provide a clear sense of direction and an explict framework for subsequent statements of goals and expected educational results. A mission statement provides direction to each academic and support division. Those divisions plan, operate, and evaluate their programs in support of the mission directions. The mission review process at CPCC requires each division to develop a statement of divisional purpose. Divisional goals become the basis for the systematic assessment of institutional effectiveness.

Environmental Assessment

Environmental assessment provides a realistic picture of the external enviroment (demographic and economic trends, state policies, student and community values, etc.) within which strategic planning takes place. It identifies trends and events which may be opportunities to exploit or constraints to avoid or circumvent. Environmental assessment information can be gleaned from reports prepared by organizations such as the chamber of commerce, the planning commission, and state agencies. Selected newspapers, magazines, and professional journals can be monitored. The opinions of College staff and others important to the College community can be documented. Data collected from a variety of sources can be analyzed in terms of specific College needs.

Central Piedmont Community College

INSTITUTIONAL PLANNING MODEL

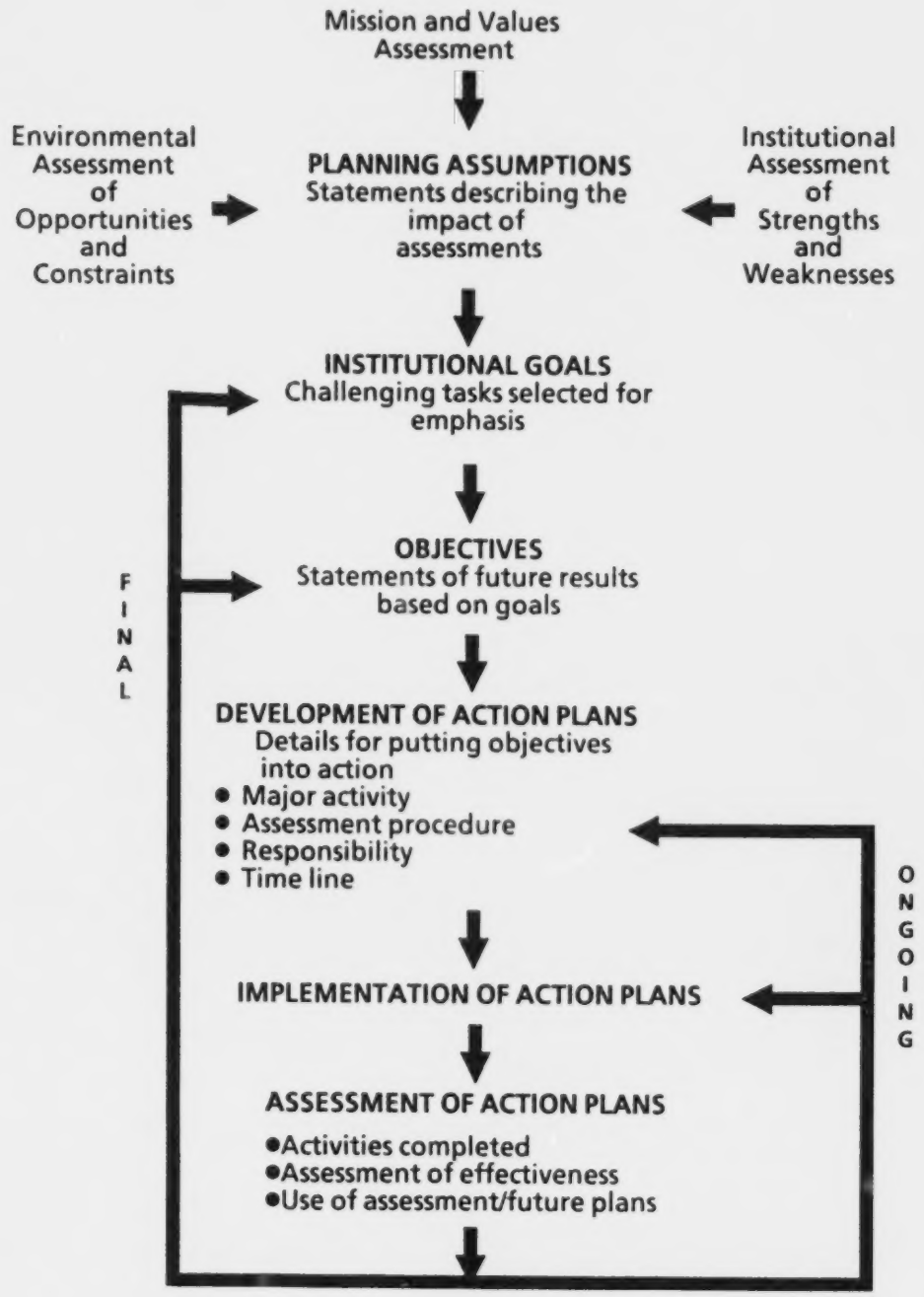

Figure 1

Institutional Assessment

Institutional assessment provides an opportunity for systematic review of the institution's current operation. It examines the College's current strengths and weaknesses, problems and capabilities in such areas as programs and services, human resources, financial resources, physical resources, student characteristics, and organizational structure and climate. This review is intended to ensure that major internal problems are addressed, that priority areas for development are identified, and that the institution's ability to move in new directions is understood. Information used for institutional assessment is generated primarily from College initatives such as evaluations of programs and services, studies of policies and procedures, analysis of student and financial trends, and employee opinions of institutional climate.

Institutional Goals

Institutional goals provide a sense of direction, a frame of reference for activities, and a means to evaluate change and progress. Goals refer to the aspirations, functions, and purposes of an institution and usually include references to a clientele being served, a process, and an outcome or outcomes. For example, a mission might be to train the area's work force; a goal related to this mission might be to provide career programs; and a related objective might be to ensure that each graduate has acquired subject mastery.

Goals can be tied directly to the operations of an institution such as admissions, instruction, student development and financial resources. Although all institutional goals need to be evaluated, it is not feasible, nor appropriate, to include the entire set of institutional goals in any given plan. The strategic planning process of mission review and external and internal assessment provides the key information needed to select critical goals which need current attention. For example, many Colleges have identified educational quality as an institutionl goal needing current emphasis. This goal is driven by a mixture of external issues (new labor market demands, revised accreditation criteria, the national discussion of acountability) and a mix of internal issues (the need to develop professional growth plans for staff, the need to improve the College's learning environment, and the need to evaluate current academic standards).

Objectives

Objectives are based on goals. They are careful estimates of desirable future results for which activities are planned and resources allocated. There may be one or many objectives for each institutional goal.

Phillip Winstead at Furman University outlines six requirements that objectives must have to be effective. They must be:

• Feasible	It can be done
• Suitable	It leads in the direction of a stated goal
• Acceptable	The human and financial costs are not prohibitive
• Achievable	Staff understands what to do
• Adaptable	It can be changed
• Measurable	Progess can be measured and results evaluated

Operational Planning

Operational planning provides the details for putting goals and objectives into action. It outlines specific activities to be conducted, specifies staff responsibility, develops time lines for project completion, determines resource allocation, and evaluates project activities. The results of planning become input for the next round of setting goals and objectives. (Figure 2).

At CPCC these plans are called action plans. Detailed instructions for completing an action plan through the development phase and the assessment phase are outlined in Appendix A. There can be several objectives for each goal and numerous action plans for each objective.

GOAL TO ACTION PLAN

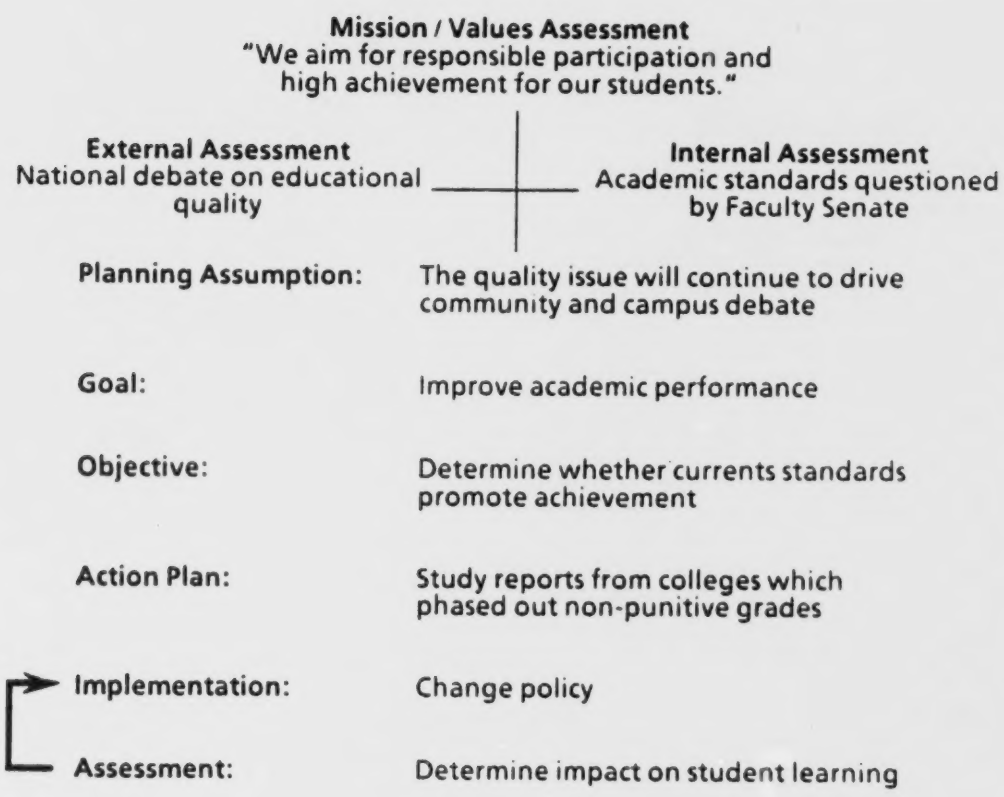
Mission / Values Assessment
"We aim for responsible participation and high achievement for our students."
External Assessment
National debate on educational quality
Internal Assessment
Academic standards questioned by Faculty Senate
Planning Assumption:
The quality issue will continue to drive community and campus debate
Goal:
Improve academic performance
Objective:
Determine whether currents standards promote achievement
Action Plan:
Study reports from colleges which phased out non-punitive grades
Implementation:
Change policy
Assessment:
Determine impact on student learning

Figure 2. Action Plan Phases

Phases of Institutional Planning

Institutional planning at CPCC has four phases:

- Development of Planning Assumptions and Notebook
- Development of Institutional Goals
- Development of Objectives and Action Plans
- Implementation and Assessment

Although many individuals have input into all four phases, specific offices have primary responsibility for each phase. (Figure 3).

Responsibility for Phases of Institutional Planning

Planning Assumptions	Planning and Research Futures Committee working with College community
Institutional Goals	Vice Presidents with selected staff Executive Cabinet Board of Trustees
Objectives	Deans/Managers or Directors with staffs
Action Plans, Implementation, Assessment	Deans/Managers Department Heads/Directors with staffs

Figure 3. Four Phases for Planning

Institutional Planning is best described in linear terms although in reality the process is cyclical and does not always fall in neat sequences. Figure 4 shows the overall timing of the four phases. Note that the calendar for the institutional planning process is consistent with the development of the College budget.

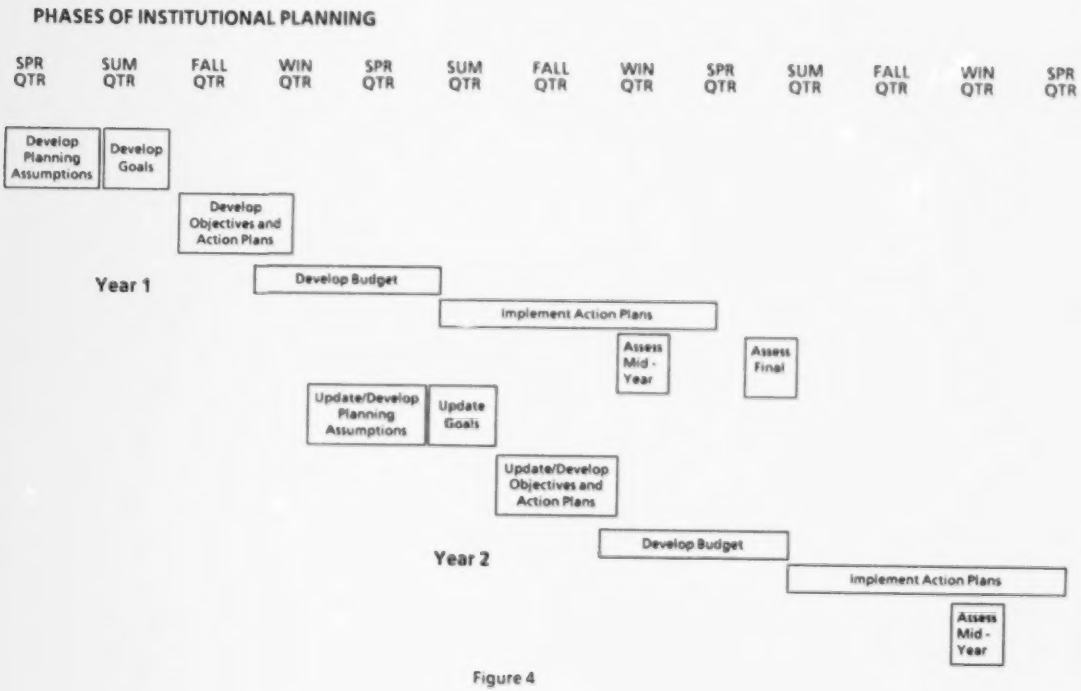

Figure 4

Figure 4. Phases for a Yearly Planning Cycle

Phase 1: Development of Planning Assumptions and Notebook

The development of planning assumptions and a planning information notebook are the critical steps preliminary to developing institutional goals. Planning and research and the Futures Committee develop the set of planning assumptions based on an analysis of the interaction of trends in the external environment and internal institutional values and issues. Other members of the College community are drawn into this process. Additional background planning information is abstracted and organized into a planning notebook. The planning assumptions and background information are distributed to the participants of the goal-setting workshop in early Summer Quarter. Planning and Research and the Futures Committee lead the pre-planning part of the goal-setting workshop.

Phase 2: Development of Institutional Goals

The development of institutional goals is the first phase of planning. The goals are developed for a two year period with annual reviews/updates. A working list of institutional goals for each vice-presidential division (instruction, business, and planning) is developed by each vice-president working with a goal setting team. This team may be assembled in any manner deemed appropriate by the vice-president, but in most cases will consist of selected members of the deans/managers and/or department heads/directors.The three divisional teams develop their working list of institutional goals during the latter part of a goal setting workshop in early Summer Quarter. The first part of the workshop is devoted to the planning assumptions and background information which provide the rationale for selecting particular goals for current emphasis. The Executive Cabinet then fashions the working lists into final form. The Cabinet may seek further input from the College staff as it refines, synthesizes, and selects from the initial work to create a cogent, final document. Each institutional goal is then assigned to one or more members of the Executive Cabinet. The final document is presented to the Board of Trustees for adoption during their summer working session. The challenges and strategies are shared with the College community during the President's Fall Forum.

Phase 3: Development of Objectives and Action Plans

Operational planning provides the blueprint to reach institutional goals. Objectives and action plans are developed during the Fall Quarter. These plans detail activities which would begin the following Summer or Fall Quarter. Action plans normally span a year or two. Objectives and action plans are developed in the Fall Quarter so they can be consistent with the budget process. Of course, not all action plans require additional funds nor do all budget requests involve an action plan. The development of objectives and action plans is initiated by the respective vice-presidents. The first step involves specifying objectives which are proposed by the next level of administration (deans/managers or directors) working with their respective staffs. The vice-president assigns each objective to one or more deans/managers or directors. They in turn develop action plans working with their respective staffs. Action plans are assigned to a dean.manager or a department head/director. For example, the goal - to improve student performance - may be assigned to the Instructional Vice-President; the objective - to determine whether current academic standards policies promote maximum student learning - may be assigned to an academic dean; and the action plan - to study the impact of reversing a non punitive grading system - may be assigned to a department head. An overview of objectives and action plans is shared with the College community during the President's Spring Forum. Written summaries are provided.

Phase 4: Implementation and Asessment

Action plans are normally implemented in the Summer or Fall Quarter and continue through the Spring Quarter. Some action plans may continue over several years. Action plans are implemented, assessed on an ongoing basis, and revised as warranted. Mid-year assessments are completed by the following Winter Quarter and final assessments are completed by the end of the following Spring Quarter. Principle assessment methods include commercial and teacher constructed tests, an examination of student records, survey research, case studies, and the use of secondary sources such as agency studies Examples of assessment measures include basic academic skill levels, subject area knowledge and application, student grades, persistence and satisfaction, instructor evaluation, and cost of operation. Assessment results are shared with the Board of Trustees during their summer working session and the entire College community during the President's Fall forum.

Benefits of Institutional Planning*

Effective institutional planning will produce benefits for both the institution and the participants involved in planning. To be effective, institutional planning will help the College to:

- **Accomplish optimum results.** Institutional planning should help make plans that work and decisions that are right for the College. Planning becomes a futile paper and pencil exercise unless the results make a real difference for students, instructors, and staff.

- **Minimize surprise from changes in the external environment.** The external environment (demographic, economic trends, state policies, student and community values, etc.) which face CPCC today is more turbulent, demanding, and complex and has a greater impact on the institution than in the past. By better understanding and preparing for the future, CPCC can shape its own future.

- **Reach agreement on strategic directions and revise in terms of changing circumstances and the results of evaluation.** Strategic plans are not straight-jackets, but are open to modifications as the environment offers new opportunities and concerns. Plans will also be reviewed, modified and refined as the College's accomplishments are measured and evaluated. Individuals responsible for carrying out planning activities must also be free from protracted procedures which make it difficult to make timely changes based on their professional judgement.

- **Coordinate and consolidate individual area plans to support college-wide goals and objectives.** Each unit must be able to plan for its own area in a way that can be coordinated within established organizational lines and across organizational structure. Coordination is not meant to imply some master plan which tightly connects all activities. However, coordination will lead to greater institutional effectiveness and give various units across the campus an institutional perspective on problems.

- **Reduce the time and effort to accomplish planning by standardizing tasks into regular administrative processes.** Since participative planning is new to CPCC, the initial efforts will take additional time. The goal is to make planning efforts a normal part of the administrative process of the College, not an extra task. Simplicity of design is foremost.

- **Coordinate efforts among the different types of planning processes (curriculum, budget, facilities, etc.).** In addition to department planning, there are many other types of planning taking place at CPCC. Institutional planning can help tie together such processes as budget development, curriculum planning, and capital improvement projects.

- **Focus specific needs for information in support of planning and evaluation.** Good information is the foundation upon which plans are made. Planning is information intensive and requires a tireless pursuit of data on students, the institution, and the community. Data must be analyzed and presented in useful, understandable formats.

- **Gain and maintain acceptance and support of key staff and then the entire institution by establishing structures and the processes for wide-based involvement.** Those who are affected by planning must be in substantial agreement with the plans, or implementation will be difficult. Plans must be developed from both the bottom up and the top down. Individuals must also be empowered to accomplish their part of the planning effort. Plans and the results of planning must be shared widely.

*Adapted from E. Green and P. Winstead, "Systematic Institutional Planning." Educational Technology, July, 1975.

APPENDIX A
INSTRUCTIONS FOR COMPLETING ACTION PLANS

Development Phase

Institutional Goal - Restate the goal for which the action plan refers.

Executive Cabinet Assigned - List Executive Cabinet member(s) given responsibility for the goal.

Objective - Restate the objective for which the action plan refers.

Deans/Managers, Directors Assigned - List staff given responsibility for the objective.

Major Activity - Describe the major activities planned to reach the stated objective. Cluster as many activities under a major activity as possible without losing appropriate distinctiveness.

Sentence Summary - Summarize the objective and major activity in one sentence.

Assessment Procedure(s) - Describe the procedure(s) planned for measuring how effective your major activity was in reaching the stated objective. Assessment procedures can be objective and/or subjective and can include several measures.

Individual Assigned - Indicate the individual(s) who is responsible for the major activity. If more than one individual is listed, the lead individual should be listed first. Responsibility should be given to department head/director level staff or above.

Activity Time Line - Indicate the beginning and ending times of the major activity in terms of year and quarter.

Assessment Phase

Activities Completed - List the actual activities that were completed. Note any significant differences from the original major activity plan.

Assessment of Effectiveness - Based on your assessment procedure(s) and any unforeseen information, describe your degree of success.

Use of Assessment/Future Plans - State how the results of your assessment were used. The results may validate current practice, may suggest changes, and/or may suggest future projects to be conducted.

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Community College Journal for Research and Planning
Volume 7, Number 1

MEASURES OF PROGRESS: STUDENT FOLLOW-UP IN THE LOS RIOS COMMUNITY COLLEGE DISTRICT

Beth S. Lee

What happens to students after they leave college? Were their educational goals met? Were they satisfied with their education? The answers to these and similar questions have become increasingly important in recent years as educational and legislative leaders have focused on the issue of accountability in community college education. The Los Rios Community College District in Sacramento, California, can now provide some answers, supported by a data base of more than 7,500 responses from its former students.

Recognizing the need for accurate data on these issues, the Los Rios District began in Spring 1983 to conduct an annual student follow-up survey to determine whether what the district was doing for students was actually working. The survey is a key component of the district's Student Flow Research Model which was discussed in a recent article in the Community College Journal for Research and Planning (Coffey, 1988), and is designed to provide answers to such questions as:

- **How well did the programs and services offered by the colleges meet the students' individual needs?**
- **Are the former students employed? Where are they working? How much do they earn? Are they working in a field related to their college program? Do they feel well prepared for employment?**
- **What is their educational status? Are they continuing their education elsewhere? Do they feel well prepared to do so?**
- **Do they plan to return to a Los Rios college in the future?**

The results of the last four annual surveys are compared in Measures of Progress, 1984-1987: A Four-Year Retrospective (Lee 1987), which summarizes the data from the perspective of the survey respondents' self-reported educational goals: University Transfer, Occupational Preparation, Occupational Retraining, or Personal Interest. A special section on nonreturning nongraduates, regardless of goal, is also included. The report describes the interaction among research staff and faculty which evolved as survey procedures were revised to meet the needs of users of the data, and also discusses the potential for replicating the study at other community colleges.

The Los Rios District includes three colleges: American River, Sacramento City, and Cosumnes River, with a combined enrollment of approximately 44,000 students. The survey populations included all graduates and certificate earners (except summer session graduates in the first two years) as well as an annual cohort of nongraduates selected to meet federal and state reporting requirements. Questionnaires were sent to 16,284 former Los Rios students over a four-year period, and 7,564 responses were received (a response rate of 50.1% after adjustment for nondelivered items).

Survey Results

Perhaps the most interesting aspect of all the data comparisons in this report is the consistency among responses over the four years to several important questionnaire items. For example, when respondents were asked to rate their community college experience in various ways (on a five-point scale where 5 was the highest possible rating):

- **Satisfaction with their educational experience in general received an average rating of 4.2 or above in each of the four surveys, with more than 99% of all respondents answering this item.**

- **Quality of instruction, instructor interest, and content of courses each received average ratings of 4.1 or above in each of the four surveys, and the rankings of these characteristics (1, 2, 3, respectively) were exactly the same in each survey. Over 90 percent (93) of all respondents answered this item.**

The survey results also confirmed that students enroll for a variety of reasons and are generally successful in achieving their educational goals. When surveyed approximately one year after leaving their Los Rios college, former students reported a high degree of congruence between their goals and their accomplishments.

University Transfer

Respondents who reported they had enrolled primarily to earn university credit comprised 29% of total respondents in 1984; this proportion rose to almost 34% by 1987. Some highlights from their responses include the following:

- These respondents rated their preparation for transfer at 4.1 or above (5 = highest rating) in the last three surveys.
- More than 68% of those with a university transfer goal (approximately 21% of all survey respondents) had actually transferred to a four-year institution within one year after leaving Los Rios. Another 17% were still continuing their education at a community college (often in Los Rios) or at a school not identified.

Among respondents who indicated they had transferred to a four-year institution:

- More than 97% had achieved junior or higher standing at the time of the survey.
- Two-thirds had been able to transfer all or almost all their community college units toward a bachelor's degree.
- Over 80 percent indicated that they experienced no problems in making the transfer.

Occupational Preparation

Respondents who stated that they enrolled primarily to prepare for a job to be obtained comprised nearly 40% of all respondents in 1984. This proportion fluctuated somewhat during the four-year period and was 36% in 1987. The survey data indicated that among these respondents:

- Satisfaction with their educational experience in general was rated 4.2 or above (5 = highest rating) in all four surveys.
- The usefulness of their college training in job performance was rated at 4.0 or above in all four surveys.
- More than 72% of those who provided employment information were employed in a field related to their training, while only about one-third had been in that field prior to enrolling in college.

Occupational Retraining

Respondents who reported their primary educational goal as improving existing job skills represented 21% of all respondents in 1984. This proportion decreased gradually to 14% in 1987. Among these:

- Salaries reported by the respondents increased dramatically from 1984-87: average monthly pay reported by those employed full-time increased almost 34% and average hourly pay reported by those working part-time increased by almost 60%.
- Satisfaction with their educational experience in general was rated 4.2 or higher (5 = highest) on each of the four annual surveys.
- Usefulness of their college training in the performance of their job was rated 4.0 or above in each of the four surveys.

- Well over 80% said their college courses helped them perform or advance in their existing employment or obtain a new job.
- While completion of a degree or certificate was not their primary educational goal, slightly more than one-third of the respondents completed associate degrees or certificates in occupational programs and another 9% completed degrees in general education or interdisciplinary programs.

Personal Interest

Respondents who indicated they had enrolled primarily for reasons of personal interest comprised less than 10% of all respondents to the 1984 and 1985 surveys. In 1986 their proportion increased to 17.5% of the total, and in 1987 it was just under 16%.

- These respondents also expressed a high degree of satisfaction with their educational experience, rating it 4.2 or above (5 = highest) in each of the four years.
- Although these respondents indicated no degree goal, more than 50% in each survey did in fact complete an associate degree or certificate at a Los Rios college. Their majors were about evenly divided between general and occupational programs.

Nonreturning Students

Nonreturning students who had not received a degree or certificate (NRSs) comprised about one-third of the survey population in each year, 1984-87, and included some students from each of the four "educational goal" groups discussed above. The majority of NRSs indicated they had enrolled primarily for job-related reasons, but the proportion who did so decreased from almost 75% in 1984 to just under 60% in 1987. During that same period, NRSs who reported they had enrolled primarily to earn university transfer credit increased from 11% to almost 18%, while those indicating a personal interest goal increased from 14.5 percent to almost 23 percent.

The responses of these NRSs helped to correct a common misconception regarding students who attend a community college and leave without completing a degree or certificate program. The studies showed that rather than being "drop-outs," these students are more often "drop-ins" who enroll for specific purposes and courses, are pleased with their college experience, and plan to return in the future. More specifically:

- These respondents expressed a high degree of satisfaction with their educational experience, rating it 4.1 or higher (5 = highest) in each of the four surveys.
- Approximately 46% of all responding NRSs indicated they enrolled only for certain courses, rather than for a specific program.
- When asked their reasons for not reenrolling, approximately 30% indicated they had completed their educational goal; some 10% said they left to attend another college; 20% left for job-related reasons, and 29% for personal or family reaons.
- Of the reasons over which the colleges might have had some degree of control, was the response option "availability of courses inadequate" which was checked by approximately 7% each year. Three other options combined (grade problems, dissatisfaction with instruction, or with courses) accounted for fewer than 3% of all NRS responses to this item.
- Over 40% of all "nonreturning" students actually continued their education within one year after leaving their Los Rios college: eleven percent or more reported that they had transferred to a four-year university; around 18% had reenrolled at a community college, primarily in Los Rios; and another 11% had continued their education but did not identify their school.
- Over two-thirds (69 percent) of all responding NRSs indicated they planned to take additional courses at the same college in the future.

In adition to the data highlighted above, the survey elicited responses to numerous other questions relevant to community college planning, as well as information on the demographic characteristics of the respondents.

Changes in Focus and Format

An important concomitant of the follow-up surveys was the dynamic process which evolved over the five-year period as institutional research procedures were revised in both focus and format in response to the needs of different constituencies. The reporting format began as a compliance report, was changed to a general report useful in policy development, and changed again to a compilation of program-specific data that could be used by college faculty and administrators in program review and curriculum development.

Pilot Study: Compliance

The 1983 pilot study was designed primarily to comply with the Vocational Education Data System (VEDS) requirements for a survey of former occupational students. It utilized two questionnaires (one for graduates, one for non-graduates) developed by the Center for Information Services, commonly referred to as the Tex-SIS (Student Information System) Follow-up System (Hall and Reed, 1979). These questionnaires, used throughout Texas and in several other states, were selected after a careful review of a number of survey instruments identified through a search of ERIC documents and an item analysis of several forms in use at that time. They included all questions required for occupational education follow-up, plus some 26 additional items useful in college and district planning.

A narrative report describing districtwide results (Lee, 1984) was presented to the district's Board of Trustees, college administrators, and selected educational leaders. CIS provided computer printouts of the questionnaire responses, aggregated by college and by various demographic characteristics.

General Reports

In Spring 1984, survey procedures were improved in several respects:

1. A composite survey form was developed, incorporating several new items of particular interest to Los Rios while retaining intact almost all items from the two Tex-SIS forms.
2. The survey population was expanded to include all academic-year graduates—general education as well as occupational majors. (In 1986 and thereafter, summer session graduates were also included.)
3. Major fields of study were identified more accurately than had been possible in the pilot study.
4. The data analysis was expanded using SPSS-X on the district's mainframe computer.

These changes have continued to be implemented in all subsequent surveys.

The narrative reports for the 1984 and 1985 surveys discussed districtwide results for three subpopulations: General Education Graduates, Occupational Education Graduates, and Nonreturning Students. The reports were presented to the Los Rios Board of Trustees and distributed to other educational policymakers at local and state levels. A separate supplement showing college-specific tables which corresponded to those in the major report was prepared each year for internal use by the district's three colleges, and computer printouts by program were made available to college staff upon request.

While these reports were well received by the Board of Trustees and generated favorable response from outside the district, college administrators continued to express their desire for information that was even more program specific. In addition, individual faculty members were beginning to request data on their respective disciplines and to use them in various ways for internal analyses of their programs.

Program-Specific Summaries

At the request of staff members at the colleges, the report format was totally revamped for the Spring of 1986 survey: a summary of responses to each questionnaire item was prepared for the district as a whole, for each college, and for each occupational major having ten or more respondents. An Executive Summary of districtwide data reported in narrative form, with the data aggregated according to the respondents' self-reported educational goal (University Transfer, Occupational Preparation, Occupational Retraining, and Personal Interest), was also prepared. All summaries were assembled in loose-leaf format to permit easy duplication or distribution of individual sections as desired. For the Spring 1987 survey, the same format was used and summaries were prepared for all major programs (general education as well as occupational) having ten or more respondents.

These changes, made at the request of college staff as they became more aware of the availability of such program-specific data, spawned other requests for the Los Rios District Office of Planning and Research to provide historical and summary data regarding college programs. This, in turn, fostered greater interaction and cooperation between the Office of Planning and Research and the college faculties.

Process and Outcomes Evaluation

The Measures of Progress reports have made it possible to match the student evaluations of the institutional processes they went through in Los Rios (the programs and services) with the outcomes they achieved (degrees obtained, income earned, job acquisition or mobility). This has proved to be an important measure of the students' success, as well as a good indicator of institutional effectiveness.

The ways in which student follow-up survey results are now being used in the Los Rios District—for curriculum development, program review and improvement, and departmental discussions of their students' success—provide evidence of the usefulness of the information. In addition, users of the information at the college and departmental level are working more closely with college and district research offices to learn what the information means and how best to use it, and to provide feedback to the researchers about ways to improve the information.

As indicated earlier, this series of follow-up studies has provided a key component of the Los Rios Student Flow Research Model (Coffey, 1988), which outlines the framework for institutional research in the district. This student-centered research model examines whether what is being done in specific programs and services is working. The student follow-up surveys have provided answers to that question from the perspective of the students.

Potential for Replication

The ease with which this survey could be replicated at other community colleges and the potential benefits which might accrue to participating institutions from having an even larger data base of comparable student follow-up information suggest that this possibility is worth pursuing. The survey methodology and SPSS-X data analysis have been refined each year since 1983, resulting in a process that is now relatively smooth and efficient. The questionnaire master has been typeset and provides for the addition of a college-specific logo each time it is printed. The Los Rios District would be pleased to cooperate with any community college wishing to participate in such a study.

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SCANS SOLO: A ONE-PERSON ENVIRONMENTAL SCANNING PROCESS

Craig Clagett

College and university planners, facing great uncertainty and potential declines in enrollment, are turning to the corporate technique of environmental scanning for help. For many colleges, however, the corporate model is too extensive and time-consuming. This article describes how one person—an institutional researcher or planning analyst—can perform environmental scanning applicable to small commuter colleges and community colleges in particular.

Should Community Colleges Do Environmental Scanning?

Why should an institution invest scarce resources in a formal scanning process? An effective scan will improve the quality of college planning and decision-making, by alerting those leading the organization to challenges and opportunities in its environment. Specific uses of environmental scanning results might include: the assessment phase of strategic planning, unit operational planning, marketing plan development, accreditation self-study reports, fundraising and proposal writing, lobbying, and public relations.

Environmental Scanning and Strategic Planning

Planning without scanning is an invitation to trouble. An institution must be aware of changes in its environment if it is to prosper. To see where scanning fits in the overall planning framework, we can review the steps in what can be called a "jargon-free planning process:"

Assessment

Where are we now?
What's happening out there?
What are we able to do?

Plan Development

What do we want to accomplish as an institution?
How are we going to do this?

Implementation

Are we doing what we said?

Evaluation

Did we achieve what we wanted?

More formally, the four stages in the strategic planning process can be described as follows. The assessment includes a situation analysis to describe the institution's current status and position, an environmental scan to identify external threats and opportunities, and an internal appraisal to identify institutional strengths and weaknesses. Plan development includes the strategic master plan to identify strategies and allocate resources to achieve institutional goals reflecting the college's mission and conclusions from strategic assessment, and an operational plan to identify unit objectives and action plans to accomplish collegewide goals. Implementation includes monitoring to ensure unit performance of operational action plans. Finally, evaluation includes preparation of an outcomes report to measure achievement of institutional goals. This brief summary of the strategic planning process highlights the key role of assessment, of which environmental scanning is an essential element.

Three ways to scan

Scanning can be done in three ways. The different approaches, which are not mutually exclusive, are: (1) establishing a scanning committee, (2) sponsoring or hosting a scanning conference or event, and (3) assigning the task to the institutional research and planning office. The literature commonly discusses the committee approach, with committee members preparing written abstracts of information pertaining to a particular aspect of the environment using a variety of sources, with the abstracts then used to develop strategic implications to guide planning. Morrison (1987) describes the extensive scanning/forecasting systems that can result. This is a costly approach, involving top people—as it must if it is to be most effective. This committee process is most beneficial for an institution that has not recently examined its external environment in a formal way. Sponsoring scanning events involving outside constituencies informs the external community that the college is carefully considering its future and is interested in giving those outside the college an opportunity to provide input (Nunley, 1987, p. 26), but it is also a costly approach. In addition to the logistical and promotional aspects of hosting any event, involvement of top administration can be quite extensive. The third approach to environmental scanning is to assign the task to the institutional research and planning office. This is the easiest approach from an institutional standpoint. However, a commitment to active dissemination of the findings is essential for this approach to be effective. Otherwise, useful information may remain unread and unused. The institutional-research-based approach has been successful at Prince George's Community College, where the director has single-handedly produced a series of environmental scans well integrated into the college's planning framework.

Six Enviornmental Contexts

Jonsen (1986) identified six environmental contexts institutions should monitor:

Demographic: The decline in high school graduates, reaching its nadir in the early 1990s, will be accompanied in most areas by increases in older populations. In addition to the shifting age composition, other population trends to be monitored for their institutional implications include changes in ethnic composition and socioeconomic characteristics.

Economic: Economic conditions may affect not only students' ability to pay (with implications for tuition schedules and financial aid) but interest in attending college. Trends in local, state, and federal governmental revenues may affect institutional funding levels. Changing industrial patterns may alter local occupational demand, with programmatic implications. Changes in tax policy may impact on philanthropic contributions.

Legal-political: Educational institutions inevitably participate in local, state, and federal political processes. Public institutions must be intimately involved in budgetary politics, but private colleges also participate in politics, from financial aid issues to town-and-gown relations. Colleges must be attuned to how changes in other contexts may have political ramifications. For example, population migration patterns affecting Prince George's County, Maryland, resulted in the minority enrollment at the community college growing from less than 10 percent to nearly 50 percent in 15 years. During this period, very little faculty turnover took place, with the result that a predominately white faculty and staff are serving an increasingly minority population. A few local politicians raised the college's employment practices as an issue, introducing legislative threats to withhold $1.2 million in college funding subject to a state senate subcommittee's review of the college's affirmative action efforts. While discussions with the college satisfied the legislators, and the restrictive funding amendments were dropped, this episode illustrates how colleges must be continuously sensitive to prevailing political currents.

Organizational-competitive: In addition to governmental and political actors, colleges and universities interact with many organizations. The quality of institutional relationships with other higher education institutions, secondary schools, business and industry groups, professional associations, accrediting agencies, and other organizations can directly affect achievement of college goals. Scanning in this context must also include assessment of the competition, not just other colleges but public schools' adult education offerings and corporate training programs.

Social-cultural: Changing cultural attitudes and behavior have programmatic and marketing implications for colleges. Dual income families, increased female workforce participation, multiple career changes, and, in general, more heterogeneous lifestyles, have colleges adjusting schedules, providing child care, and developing innovative delivery modes.

Technological: Changing technology affects both what colleges teach and how they teach it. New programs in information systems, robotics, and the like are the obvious manifestations, but equally important are the new ways instruction is being delivered. Interactive videodiscs, cable and satellite communication, and other information technologies may portend new roles for faculty and new relationships with students. Office automation (particularly microcomputers) has altered the manner in which even the most routine campus tasks are performed.

Identifying these six contexts for environmental scanning encourages a comprehensive approach sensitive to the diversity and turbulence of factors affecting community colleges today (Jonsen, p. 15). The solo scanner must include all of them in his or her efforts; an incomplete scan can mislead an institution into a false sense of security. Most community colleges track demographic and economic trends, but many pay insufficient attention to the legal-political and organizational environments.

Environmental Scanning Source Materials

Sources of information for keeping on top of environmental trends are numerous and varied. In this section, several useful sources will be identified, starting with global and national trends and getting successively more localized. Specific examples from Maryland and Prince George's County will be cited for concreteness; in most cases, analogues can be found in other states and localities.

National sources. The fundamental source is the Bureau of the Census of the Department of Commerce. To keep up with Census information, subscribe to its Monthly Product Announcement and Census and You (formerly Data User News). Also obtain their telephone contact list of staff specialists; I have found them extremely professional and helpful. Also available is CENDATA, the Bureau's on-line data service. Other good sources of national data are American Demographics magazine and the United Way of America, whose strategic planning division produces valuable reports such as What Lies Ahead: Looking Toward the '90s. National sources with a focus on education include The Chronicle of Higher Education, the American Council on Education's Cooperative Institutional Research Program, and Harold Hodgkinson's All One System: Demographics of Education—Kindergarten Through Graduate School (1985).

State Sources. Official state agencies can provide a wealth of useful planning information. Maryland's Department of State Planning, for example, makes census and other data available on diskettes as well as analyzed in reports. They publish a data center newsletter with both analysis and product announcements. In addition to periodic population projections by age, race, and gender, Department of State Planning publications of particular usefulness include Public School Enrollment Projections and Jurisdiction Migration Flow Trends. The latter publication was especially useful in explaining enrollment growth during a period when overall county population did not change. Another source of population data is the state Center for Health Statistics. On a different plane, the Maryland Chamber of Commerce publication Business Issues for 1988 identified over 50 issues of "utmost concern" to the Maryland business community. In one convenient source, the environmental scanner gains a perspective on what's important to area businesses. While not a substitute for personal interaction with industry leaders, such publications can be good background material to sensitize college planners to the positions of a major constituency. For solo scanners, such shortcuts are invaluable.

Metropolitan area sources. For community colleges, information on the local service area is especially useful. Colleges in or near major metropolitan areas can benefit from many municipal, association, and private sources. City agencies often provide data similar to that available from state governments, but for a more focused geographic area. Local governments sometimes cooperate in planning endeavors that produce valuable data for college scanners. For example, the Metropolitan Washington Council of Governments produces cooperative population and economic forecasts and issues a regional newsletter. Professional business organizations, such as the Washington/Baltimore Regional Association, are a good source of industrial and economic information. Some local chapters of the United Way prepare planning reports of high quality. The United Way of Central Maryland, for example, has produced an environmental scanning report entitled Central Maryland Megatrends: Opportunities For Action (1988) available in a 37-page booklet or a slide program with tape narration. Large cities may have private research firms that produce reports available to the public. Local research firms in Washington, for example, have issued reports from changing lifestyles to financial projections for local jurisdictons. Finally, larger cities often have their own magazines (The Washingtonian) and business periodicals (Regardies) as well as major newspapers, all of which provide a continuous source of relevant scanning information.

County sources. *Commuter schools, especially community* colleges with lower district tuition and thus concentrated service areas, can benefit from many sources of county data. County government planning offices, economic development corporations, and local chambers of commerce are all sources of county data and forecasts. Scanners also need to be alert for one-time events and commissions that can produce valuable information. For example, the county executive and local business leaders in Prince George's County, Maryland, initiated a Strategic Planning Group for the county in 1983 that produced a Strategic Plan for Prince George's County (1986), a 45-page report with analysis and strategies for issues in education, public safety, employment, and public service financial stability.

The above sources, from scanning efforts in Maryland, are meant to be suggestive of what may be available in other areas. By locating and using existing trend reports and forecasts, a meaningful environmental scan can be done by a single energetic researcher.

Population Analysis

Many techniques are available for preparing scans of the six environmental contexts identified above. Two ways of presenting population information will be discussed here as illustrations of how to effectively communicate data that can be very detailed and cumbersome in source documents.

Displaying Changing Age Composition. Population forecasts are basic planning data. Detailed projections by demographic subgroups over several years are commonly available and contain useful information—but how can the scanner get the message across to busy decision-makers? Steer away from tables with columns of numbers. Microcomputer business graphics software enable the solo scanner to easily prepare data displays with impact. An area graph can illustrate projected changes in the number of county residents in each age cohort. Credit program administrators familiar with the expected decline in high school graduates did not realize that the decline also included people in their twenties. Noncredit administrators, used to serving adults beginning their careers and senior citizens, immediately began planning how to reach the expanding group in their forties and fifties. A simple graph reached an audience where comprehensive planning reports had failed.

Geographic Population Analysis through Mapping. The availability of microcomputer mapping software has made possible the effective communication and geographic analysis of demographic data at a cost within the budget of many community colleges. For less that $1,000, a planning office can have at its disposal a powerful scoftware package and associated cartographic boundry files enabling the display of user-selected data for geographic areas such as census tracts and zip codes. Census and other data are readily available on diskettes, both commercially and from some government agencies, and each college can create and display its own data on maps of its own design. For example, a school might map its enrollment yield rates by zip code to help target marketing efforts. Mapping can suggest transportation needs or even locations for extension operations.

Any data available for distinct geographic areas can be mapped. Mapping captures geographic relationships that spreadsheets and pie charts miss. Most maps use different hatching or colors to indicate the data range values for a given geographic area (e.g., county, census tract). To display areal distributions of variables that can meaningfully have a density, or occurrences per geographic area, a dot-density map is ideal. This type of map can be used to show the geographic distribution and density of high school graduates in the county who have not attended college. Using a plotter, maps can be produced for print copies or as color transparencies for presentation use.

Dissemination of Environmental Scanning Findings

The most through environmental scan is of little value if decision-makers are not made aware of its findings. Effective dissemination of scanning results is a key part of the process. This is especially important for the institutional-research-based approach, since the involvement of top people assumed in the committee and conference approaches is largely absent.

Dissemination for a college completing its first major scan might follow the following pattern. The first step would involve a formal breifing presented to the college's planning council, president's cabinet, or equivalent top administrative group. This provides for important feedback to the scanner, and may initiate additional work before any further dissemination. Once top management is satisfied with the scanning results, a series of formal presentations to college constituency groups is recommended. These would include, first, the governing board of trustees

Table 1
PRINCE GEORGE COMMUNITY COLLEGE
Office of Institutional Research and Analysis

ENVIRONMENTAL SCANNING HIGHLIGHTS
December 1987

TREND OR FORECAST	IMPLICATIONS
1. Changing county age distribution, with fewer high school graduates and more older adults. H. S. Grads: 1988: 7,800 1990: 7,100 1992: 6,000	1. Decrease in traditional source of full-time students. 2. Busy, part-time adult students balancing work, family, and other commitments; may have implications for class scheduling, etc. 3. More demand for enrichment courses. 4. ?
2. Changing racial composition, with an increasing proportion minority.	1. Blacks less likely to enroll in college, could mean fewer entering students. 2. As a group, black students have had lower retention rate; student careers of shorter duration imply lower enrollment levels 3. ?
3. Continued high female workforce participation. Nearly two-thirds of the women in the metro area are employed outside the home, with some gaining professional, managarial positions. Continued increase in households headed by single women. Over a third of county households with incomes below the poverty line headed by black females.	1. A majority of college students will continue to be female. 2. Organizations will have to adapt to family needs of working parents (schedules of both students and employees, provision of child care.
4. Little or no improvement in capabilities of entering students. Average combined SAT scores: Maryland 914 black students 742 white students 958 Prince George's 826 Over half of the H. S. students in the CGP testing program need remedial coursework in at least one area. SAT scores, increasing in most area jurisdictions, continue to decline each year in Prince George's.	1. Testing and placement remain crucial for promoting student success. 2. Course prerequisites enforcement important: "By allowing quasi-literate students into regular college-level courses, community colleges often have forced faculty to compromise standards." (John Roueche) 3. Remedial education essential for expanding population. 4. Student support services, faculty advising, and targeted retention programs may help at-risk groups. 5. ?
5. Most students will be employed outside the home. At PGCC, 58% work full-time 28% work part-time (1/4 of full-time students were also working full-time)	1. Advisement should include realistic expectations; limited courseloads for those with heavy employment demands? 2. Schedule more one-night a week classes; fewer meetings per week in summer sessions. 3. ?
6. Intense competition for students. Older students, once the community colleges' by default, increasingly courted by four-year colleges and propriatory schools. Military is attractive option for younger population. Corporate education growing.	1. Expand marketing effort with targeted appeals to inform service population of PGCC offerings. 2. More articulation agreements (program-specific).
7. Prosperous local economy with considerable growth potential. Private sector information processing, electronics, and other R&D firms most visible additions to the largely white-collar and services-oriented local economy. Large county employers include Goddard SFC, University of Maryland, Giant Food, U.S. Bureau of the Census, Beltsville Agricultural Research Center, Litton's Amecon Division, and Digital Equipment Corporation. Smaller firms are predominant: Excluding self-employed persons, over two-thirds of all county business locations have less then ten employees. Only 23 firms in the county have 500 or more employees.	1. Continuing cliantale for specialized contract training. 2. Credit and noncredit courses and programs developed/evaluated to provide effective contribution to county workforce improvement. (General education outcomes as well as technical training.) 3. Sponsor and/or host business and community organization events on campus. 4. Expand cooperative education and student internship programs. 5. ?
8. Increased demand for institutional accountability. Accrediting agencies, state officials, and the public will expect colleges to document student achievement.	1. Compile and reformat existing evaluation information. 2. Create additional assessment tools? 3. ?
8. Political pressure to increase minority employment at the college.	1. Monitor implementation and results of the college's affirmative action plan. 2. Establish minority affairs office. 3. ?

or regents, and then the faculty senate and classified staff organization. A series of written reports with the detailed data supporting the major briefing findings should be distributed to the administrative staff, and available to others on request. If the college publishes a Master Plan or similar document, environmental scanning findings make an ideal chapter preceding the strategic plan itself. Finally, a two-or-three page memo summarizing the scanning highlights should be circulated among all employees of the college. Table 1 shows the scanning highlights shared with the staff of Prince George's Community College in December, 1987. Note that each set of implications associated with a specific trend or forecast ends with a question mark, suggesting that the reader should think about what the forecast might mean for his or her office or function at the college.

Effective dissemination requires that the scanner think in terms of simple communication. While the scanning process may involve sifting through thousands of pages of material and hundreds of hours of interviews and conversations, the final message that gets through will necessarily be brief. Graphics can often communicate data effectively, as suggested above with the population graphs. Sometimes a slogan can help. To make the point that even if the enrollment decline among recent high school graduates is offset by an equal number of older students entering college, FTEs would still decline substantially, I coined the phrase "it takes two 35-year-old to equal one 18-year-old." (The average credit load of the older students was half that of the younger students.) The line got some laughs but the message stuck.

Conclusion

Environmental scanning is too important to effective planning to be avoided due to cost reasons. Community colleges, no less than corporations and governments, need to understand what is happening in the environment in which they exist. This article has attempted to show how scanning can be accomplished in a cost-effective manner; indeed, it argues one person can do a valuable scan by identifying the right sources and by disseminating the results effectively. The article will be considered successful if its practical guidelines inspire new or creative scanning efforts at today's community colleges.

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Community College Journal for Research and Planning
Volume 7, Number 1

AN ERIC REPORT

STUDENT RECRUITMENT

Mary Hardy

One of the ways community colleges have responded to declining enrollments is by actively recruiting new students. This short review highlights six ERIC reports which examine a number of recruitment strategies now in effect.

Full-text copies of these and other ERIC documents can be ordered from the ERIC Document Reproduction Service in Alexandria, Virginia (1-800-227-ERIC), or read on microfische at over 700 libaries nationwide. Please contact the ERIC Clearinghouse for Junior Colleges for an EDRS order form or a list of libraries in your area that house ERIC collections.

Bogart, Quentin J., and Galbraith, James D. Marketing America's Community Colleges: An Analysis of National Marketing Efforts by Community Colleges. A Final Report on the MECCA Project to the Council of North Central Community and Junior Colleges. Special condensed summary report presented at the 68th Annual Conference of the American Association of Community and Junior Colleges, Las Vegas, NV, April 24-27, 1988. 23pp. (ED 296 771).

In 1987, a study was conducted through the Marketing Efforts of Community Colleges in America (MECCA) project to assess the scope and status of marketing/institutional advancement efforts among two-year institutions. Questionnaires were mailed to marketing officials at 331 community, junior, and technial colleges, requesting information on institutional characteristics, place of the marketing program within the organizational structure, planning, foundation and financial support, student recruitment efforts, public relations and institutional image, efforts to promote external support, minority recruitment, and projections for the future. Study findings, based on a 71.6% response rate, included the following: (1) at most institutions, the chief marketing officer spent less than 50% of his/her time dealing with marketing issues; (2) outside consultants were used to assist in planning and implementation by nearly half of the colleges; (3) most two-year institutions used internal operating funds to support their marketing programs, though approximately half devoted less than 1% of the operational budget to support the effort; (4) about 50% of the colleges reported having written marketing plans, covering a one- or two-year period; (5) marketing personnel believed that staff and faculty were highly supportive of their efforts in apporximately half of the colleges; and (6) 84% predicted that their colleges would become more actively involved with marketing in the future.

Kirkbride, Eunice., and Others. "Articulation: A Strategy for Wooing High School Students while Meeting the Needs of Society." Papers presented at the Annual Conference of the Virginia State Council for Higher Education, Norfolk, VA, November 6-7, 1986. 23pp. (ED 290 524).

These three papers address various aspects of community college/high school articulation in Virginia. First, Eunice B. Kirkbride's paper, "Articulation in Northern Virginia," examines the process of smoothing the path from high school to community college by evaluating prior learning and eliminating the need to repeat previously learned material. Kirkbride outlines the goals of Northern Virginia Community College's articulation plan with the Fairfax Public Schools; reviews progress on the implementation of these goals; and describes work undertaken through a Sears Partnership Development Fund grant to create a national model for articulation and cooperative education. Next, "The Articulation Process: Theory into Practice," by Jim Reynolds, examines ways of approaching the task of developing an articulation agreement, focusing on the membership, purpose, and role of the advisory/oversight committee and the "working committee" responsible for creating the agreement. Finally, "The Need for Articulation and the Benefits for the High School and Community College," by Betty Hinson, addresses the issues of why articulation efforts benefit the high schools, and what high schools can do to help implement articulation.

Lindemann, William H., Jr., and Others. Student Success: The Common Goal. Integrating Student Services within the Community College. Iowa City: National Center for the Advancement of Education Practices, American College Testing Program, 1987. 112 pp. (ED 292 527).

The Educational Services Process Model described in this guide is made up of six interactive and interdependent elements functionally related to the common goal of student success. After part I traces the evolution of student services in the community college, part II presents 10 assumptions for planning, highlighting the need for staff involvement; clear definitions, policies, and procedures; "customer service" approach to college clientele; comprehensive staff development; encouragement of model programs; and the integration of technology to improve the delivery of student services. Part III presents a model to help community colleges develop an integrated student services program made up of six components: (1) an institutional information system to keep track of enrollments, inquires and admissions, community population data, student progress, retention, community and student needs, and institutional effectiveness; (2) a student outreach and contract plan, which emphasizes community relations as well as student recruitment; (3) an inquiry/admit system that ensures potential students of prompt and helpful information through advising, orientation, and assessment services; (4) registration; (5) educational programming; and (6) program evaluation and feedback. Appendices describe a model student information system and center and offer information on the application of the model at Central Oregon Community College.

Oromaner, Mark, and Krynicky, Harry. Strategic Plan to Address Recruitment and Retention Strategies for Black and Hispanic Students at Hudson County Community College. Jersey City, NJ: Hudson County Community College, 1987. 77 pp. (ED 286 549).

Developed by Hudson County Community College's (HCCC's) Task Force on Recruitment and Retention of Black and Hispanic Students, this report offers a plan of action for addressing the problem of declining black enrollment at the college. Section 1 describes the plan's development. Section 2 offers an overview of the HCCC and the surrounding community, including a history of HCCC; a description of Hudson County; information on population characteristics and trends; population projections; a review of occupational, empolyment, and business trends; and an overview of the minority presence at HCCC. Section 3 presents minority enrollment data, including information on enrollment trends, sources of minority enrollment, educational opportunity fund students, and retention. Short-term goals and current activities with regard to recruitment and retention are presented in section 4, followed in section 5 by long-term goals and projected activities, featuring quantitative goals, methods of ensuring access and recruitment strategies, ways of removing barriers to success, counseling and academic services, other student services, retention strategies, and methods of monitoring student retention. The administration, monitoring, and evaluation of the recruitment and retention plan are discussed in section 6. The final sections list HCCC resources to be devoted to the project and offer a brief note on institutional philosophy and mission.

Spence, Charles G., and Others. "Enrollment Management: A Key to Student Success." Paper presented at the 68th Annual Convention of the American Association of Community and Junior Colleges, Las Vagas, NV April 24-27, 1988. 38 pp. (ED 294 636).

This four-part presentation examines the theory and practice of enrollment management at Florida Community College at Jacksonville (FCCJ). First, Charles C. Spence offers a brief description of FCCJ and reviews some of the problems that faced the college when he assumed the presidency in 1985, including a significant enrollment decline and serious morale problems among employees. Next, Charles R. Dassance defines enrollment management as the planning, coordination, and intrgration of traditionally independent collegiate activities associated with recruiting, enrolling, and retaining students. He then explains how the concept was implemented within the Department of Student Affairs at FCCJ through academic planning, career planning, student

development programming, retention planning, community and co-curricular activities, and enrollment services. Charlotte Minter then examines the steps in the creation of the Division of Enrollment Services, which was established to provide personalized services to students; increase the use of technology in order to release staff from tedious tasks and allow them more time to work with students; combine recruitment, admissions, and student aid functions; and develop methods to increase staff knowledge of programs and services. She also highlights the major accomplishments of the Division. Finally, Dr. Spence provides a summary of enrollment management issues yet to be resolved.

Wilhelmi, Charlotte, and Others. Strategic Marketing: The Use of Image Assessment and Marketing Review. Annadale Northern Virginia Community College, 1987. 52 pp. (ED 287 544).

In 1986, Northern Virginia Community College (NVCC) conducted a marketing review to assess the achievement of marketing objectives, identify the most effective marketing activities, assess the perceived quality and appropriateness of the college's programs and services, and formulate recommendations to improve marketing awareness, and image. Qualitative data were collected using the focus group technique, a group interview process involving the provost's staff on each NVCC campus, the campus councils, random samples of college staff, and sample groups of NVCC students. Quantitative data were gathered via faculty and staff (N=248), NVCC students (N=871), and the general public (N= 324). Study findings included the following: (1) the most frequently cited reasons for choosing NVCC were "convenient location" (69%), "I can work and go to school at the same time" (64%), and "low tuition" (64%); (2) 74% of the respondents indicated that they intended to graduate from NVCC, though school statistics suggest that only 10% will graduate; (3) the quarterly schedule of classes emerged as the most effective marketing activity undertaken by NVCC; (4) only 3% of the community residents surveyed had not heard of NVCC; and (5) the perceptions of faculty and staff regarding the public's image of NVCC were lower than the public's actual image of the college. The survey instruments are included.

The ERIC database is comprised of reports, papers, and guides which are contributed by practitioners, individual colleges, state agencies, professional associations, and research centers. If you or your colleagues have prepared materials that you would like our reviewers to consider for inclusion in the ERIC collection, send two copies of each manuscript to:

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Community College Journal for Research and Planning

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NATIONAL COUNCIL FOR RESEARCH & PLANNING

Volume VII, Number 2

COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

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The COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING is published biannually by the National Council for Research and Planning to provide an avenue for publication for members of NCRP and others involved in community college education.

COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

Refereed Journal of the National Council for Research and Planning

A Council of the American Association of Community and Junior Colleges dedicated to the improvement of two-year post-secondary education through better research and planning.

An affiliate of the Association for Institutional Research.

Community College Journal for Research and Planning

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Community College Journal for Research and Planning
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ASSESSING THE COLLEGE MISSION:
The Starting Point for Institutional Effectiveness

John Quinley

How do community colleges maintain excellence as they adapt to a constantly changing, technically advanced, interdependent and complex world? How do colleges meet the demand to nurture greater numbers of students to higher levels of intellectual functioning? How do colleges promote cultural understanding and prepare students to work cooperatively? And how do colleges meet society's call for action and evidence that these new challenges are being addressed? The quest for answers to these critical questions will lead many colleges to reassess their fundamental statement of purpose—the college mission.

The mission is a beacon that provides strategic direction for the institution. It is also the blueprint which provides the basic conceptual framework for the entire organization. A mission which provides appropriate direction and linkage can serve as the base for subsequent measures of institutional effectiveness. The use of these measures to improve programs and services and to better share successes and concerns with key constituencies makes this effort worthwhile.

At the heart of the institutional effectiveness effort, is the measurement of key educational results which clearly emanate from the institutional statement of purpose. This direct connection from stated intent to actual results should be evident at all levels and for all units of the college. The starting point for the institutional effectiveness effort then is to determine if the mission is providing appropriate direction for the institution and to evaluate whether the bond between stated purpose and actually functioning is clear and comprehensive.

Preparation and Process

A successful mission review process has its roots in careful planning. The process should have a clear charge and plan of action. It should be based on a clear understanding of the institution's present and future operating environment both internally and externally; and, it should involve the efforts of the faculty, administration, governing board, and students. The entire process from initial preparation to final adoption and dissemination will take a minimum of six months to complete.

Charge

The basic charge is to draft a statement which will provide institutional direction and foundation for the present and the foreseeable future. The principle tasks in the process include:

1. Determining whether the current mission statement reflects the actual functioning of the institution. (Over time many institutions add functions, i.e. a transfer division, that are not reflected in the current mission statement. In addition, changes in institutional emphasis occur which are not congruent with the current statement.)
2. Judging whether the statement is adequate to lead the institution into the future.
3. Crafting a new mission statement.

The charge can also include gaining college-wide understanding and support for the new statement.

Schedule

Since the concept of mission can be elusive, the entire process can easily become protracted. It is thereby important to set an agenda for the entire process in as concrete terms as possible and to carefully plan and control individual meetings. On the other hand, task force members do need time to express their ideas, therefore, flexibility must be maintained throughout the process.

Information

A mission assessment is informative intensive, and requires data which provides a good understanding of the past, present, and future. The strategic planning process provides the pertinent information to assess the current and future operating environment of the institution. Planning assumptions and strategic goals reflect the futuristic thinking which should be apparent in a revised mission statement.

The college may also want to conduct a goal inventory study which assesses both the current functioning of individual goals and their degree of importance to the institution. Several commercial agencies have developed goal inventories and assist in the analysis. Colleges can also develop their own instruments.

Other important background items include exemplary mission statements from similar institutions, enabling state legislation documents, accrediting agency materials, and futurist articles and studies from secondary sources. The key to effectively providing this information is to identify the critical pieces without becoming overwhelmed by a massive body of data.

It is also helpful to have the mission task force work through brainstorming exercises in which they think about the future of their institution. The following questions are fundamental to this process. Who will the students be? In what programs will they be enrolled? What skills, knowledge, and attitudes will they be taught? How will they be taught? How will we as staff work together? How will we work with the community?

Involvement

College-wide involvement, starting with a firm and enthusiastic endorsement of the President and key college leaders, is essential. Involvement can be ensured by:

1. Appointing a representative task force, to include a pronounced compliment of members from the faculty.
2. Surveying the entire college for perceptions of future directions and current level of functioning.
3. Conducting extensive reviews by key staff members and committees. (This is an essential step in fine tuning the document and in gaining institutional acceptance.)
4. Involving the Board and other key constituencies. (Even if an institution does not elect to involve Board members as part of the mission task force, Board understanding and support is crucial. Ultimately the board will be asked for their formal approval.)
5. Keeping the college community aware of the process via a newsletter or circular.

Review

If the mission statement is to become more than a coffee table decoration, it must be understood and supported. There must be a review process, and it is best if conducted by principal staffs and committees at the college, as well as by significant members of the greater college community.

In this regard, it is helpful to highlight changes in the revised statement and to forward standard questions for each review setting. And of course, be prepared to bring suggestions back to the task force for further discussion and potential changes. Clear acknowledgment of input from these review groups assists in college-wide adoption of the statement. Finally, all publications using the mission statement must be reviewed and a schedule for updating developed.

Dissemination

After adoption of the mission statement, it is vital to "sell" the product. Dissemination presentations and documents should be tailored for all important constituencies. Ideas for dissemination include:

1. Holding college-wide forums.
2. Packaging the mission statement as a brochure.
3. Mailing the statement to key constituencies, such as advisory councils and Board of Trustees.
4. Developing a slide/tape or video presentation which uses the members of the task force and other key members of the college community as spokesmen.
5. Printing and framing the purpose statement to hang in key locations on campus where staff, students, and the community will see it.

Content

A mission statement must address all components of the institution and represent the official posture and practice appropriate to its specific educational role. The statement should include unique features about the institution such as the use of technology and experimental learning.

The mission should be written in a clear and concise manner and include enough detail to provide a clear sense of direction and an explicit framework for subsequent statement of goals and expected educational results. It should be possible to turn every sentence of the mission into a question regarding effectiveness; then evidence can be provided to support the mission contention.

Outline

The mission statement is typically under five pages in length and can include any of the following:

1. An overall purpose statement which captures the essence of the institution in a few paragraphs.
2. A brief history (including founding date, founders, location or locations, and significant developmental changes over the years.)
3. Pertinent descriptive information (e.g. public/private, rural/suburban/urban, coeducational, religious affiliation, geographic service region, etc.)
4. A vision statement expressing the ideal operating environment and the institutions role within it.
5. A statement expressing institutional values, beliefs, or intent.
6. A description of students/clients including their demographic and socioeconomic characteristics, their educational background, any important personal/affective characteristics, and their education/career aspirations.
7. An outline of the major functional areas and the types of occupations and endeavors which graduates are prepared to undertake (e.g. general education, developmental education, vocational and technical education, student development, community or public service, coorporate and continuing education, instructional support.)
8. A description of the core skills, knowledge, experience, and attitudes in the form of educational outcomes, ideally to be acquired or developed by the institution's students.

New Elements

Finally, what can one anticipate as new elements in a revised mission statement? Here are a few ideas:

- Greater involvement with the overall development of the community.
- Expanded partnerships with other institutions of education, business and industry, and governments.
- A more proactive stance in identifying community problems and solutions.
- A renewed concern for reaching out to all segments of society.
- Greater appreciation of ethnic and cultural diversity.
- More attention to the development of attitudes which support personal development and ethical understandings.
- Greater flexibility in educational programs and instructional deliveries.
- Greater emphasis on advanced academic skills and mental receptiveness to acquire and apply knowledge.
- An expanded use of technology.
- A commitment to systematically measure institutional effectiveness.
- A concern for the natural environment.

Conclusion

Mission review is a complex and comprehensive process if done properly, but the payoff is enormous. A revitalized mission statement provides a focused direction for the future and a structure by which to evaluate the effectiveness of the entire institutional enterprize.

John Quinley is Director of Planning and Institutional Research, Central Piedmont Community College, Charlotte, North Carolina 28235.

Community College Journal for Research and Planning
Volume 7, Number 2

THE KENTUCKY RETENTION MODEL FOR COMMUNITY COLLEGES

Brian E. Daly

Student retention is an essential element of survival for community colleges and universities. Entrance and retention programs need to focus on the best use of resources to keep students effectively enrolled. The purpose of this study is to examine student retention patterns in a public higher education system, identify influential retention factors, explore institutional differences and similarities, and develop strategies to improve student retention rates. Of particular value is the development of predictive equations using variables collected prior to enrollment in higher education. The equations can be applied to determine whether a particular student is more likely to be a success or a casualty of public higher education.

The initial statewide retention study focuses on student persistence at the entering institution (community colleges and universities) and continuance at other in-state higher education institutions. A variety of demographic, academic, and personal attributes of first-time, full-time, traditional-age freshmen who chose to seek a four-year degree through the state's public community colleges and universities were studied to determine influences on retention within public higher education.

Review of the Literature

Retention in higher education is an important economic factor for institutions, states, and the nation. The needs of a highly technical society demand a well-educated workforce. The National Alliance of Business (1986) noted that by the year 2000 new technology, international competition, consumer preference, and demographic shifts will cause significant differences between job requirements and the abilities of the available pool of workers unless successful efforts are made to upgrade education. One step in bringing about this upgrade is to improve the retention of persons who have already made a commitment to self-improvement through enrollment in higher education.

Retention studies have been conducted by many colleges and universities. Generally, success is measured as the number of incoming students who remain through formal completion of their course of study. Most studies concentrate on the retention rates of various student groups. Although some studies have included several institutions, a limited number have developed statewide public higher education inter-institutional student retention rates. Retention studies which include a system of public higher education and use a theoretical model are rare.

Basic Models

Much of the work on retention is based on models proposed by Spady (1971) and Tinto (1975, 1987). Both researchers developed theoretical frameworks derived from Durkheim's Theory of Suicide. Tinto's model, which has gained the greater acceptance, emphasizes two points. First, a "theory of departure" is needed on which to plan institutional actions. Tinto's theory states that students enter with social and academic expectations. The match between an institution's academic and social environment and a student's cognitive and affective needs (institutional fit) affects the probability of continued enrollment and eventual success of that student. Other authors (Pascarella Duby, and Iverson, 1983; Bean and Metzner, 1985; Anderson, 1985) have presented models which recognize the importance of social and academic influences on retention.

Second, Tinto proposes institutional problem-solving techniques, based on his theory of departure, to reduce attrition and improve retention. He emphasizes that retention may not always be in the overall best interest of the student or institution. Goal clarification by the student and institution is presented as a way of establishing a mutually rewarding relationship.

Tinto's retention model has been applied to commuter and non-resident institutions where the institutional fit may be of less importance because opportunities for institutional socialization are minimal. Studies by Pascarella and Chapman (1983), Bean and Metzner (1985), Fox (1986), and Williamson and Cramer (1988) note that non-traditional students experience fewer interactive opportunities with and within their institutions than traditional students. Bean and Metzner (1985) propose a conceptual model of non-traditional student attrition which puts more weight on background variables and intent than does Tinto's model.

Despite reduced socialization opportunities at non-traditional institutions, the Tinto and Bean and Metzner models appear to provide good frameworks from which to construct a multi-institution conceptual retention model. A new model is needed because existing theoretical models do not fully describe non-traditional attendance patterns and the multiple outcomes possible in the various types of higher education institutions. The definitions for student success have become more varied because of the rapid rise in the number of non-traditional students at traditional and non-traditional institutions.

Community College Studies

There are many studies in the literature specifically concerned with community college retention. Since 1970, nearly six hundred studies have been reported through ERIC dealing with retention/attrition issues. Despite the large number of studies, few have approached the problem with a theoretical perspective. Measuring community college success is a departure from the more traditional studies conducted using a theoretical model on four-year institutions. A framework which refines definitions to account for the multiple outcomes unique to community colleges is needed. Definitions of successful outcomes are reported in the literature and are important in constructing a community college model.

Voorhees (1987) is one of the few researchers to use a traditional theoretical model in studying persistence factors of community college students. He uses gender, enrollment status (full-time, part-time), ethnicity, student purposes, satisfaction, intent to return, and academic integration variables (GPA, contact with faculty, and study hours per week) as variables to measure persistence. Voorhees reports that gender, purpose for enrolling, and intent to return are significant main effects whereas GPA, faculty contacts, and hours studying are independent of persistence. He suggests that future studies divide students into subgroups and study retention patterns for each. This agrees with Bean and Metzner's (1985) contention that nontraditional students are different. Voorhees limits his study to one year retention (avoiding the drop/out controversy) and does not deal with multiple outcome measures.

Losak (1986) disagrees with the degree-related definition of success that has been placed on community colleges. He states that college-going patterns have changed over the past twenty years; there are more students who choose not to follow pre-defined attendance patterns. Losak stresses the necessity for having multiple outcomes measures to reflect the degree and non-degree missions of community colleges.

The dimensions of success outlined by Losak are academic standing (GPA), persistence category, and goal attainment. In his study, degree seeking students who achieved a 2.0 GPA or higher and either persisted or graduated and non-degree students who achieved a 2.0 GPA or higher and either persisted or left were designated as successful.

Doan, Friedman, and Verroye (1986) support Losak's contention that student objectives should be used to determine retention rates. In their study, Doan et al. relate retention to student objectives and the amount of time students expect to spend at a community college. They found that half of their incoming students remained enrolled for only one quarter which matched the plans of one-third of the departing students (deemed successful in relation to their entering objectives). Academic performances was identified as a good predictor of subsequent semester enrollments.

These studies support the need for multiple outcome measures. Community College students enter with a variety of needs, intentions, and goals. Identification of the important persistence variables is made complex by these factors. Although Losak uses GPA as an outcomes criteria, Voorhees' research appears to indicate that it is not a significant reason for persistence. Bean and Metzner (1985) contend that the important variables will differ by subgroup. An analysis which deals with traditional success measures has a place in the literature if it is sensitive to multiple outcomes.

Outcome Measurements

Retention has been measured against a variety of criteria. In some studies it is tracked on a semester basis or an academic year while in others it is studied as an entry-to-graduation process. Definitions of retention differ from study to study. Successful retention at one institution may not be success for another.

Many retention/attrition studies focus on the first year of attendance (Adams and Smith (1987), Thomas and Andes (1987), Fox (1986), Getzlaf et al. (1984), Hayden and Holloway (1985), Kowalski (1982), Lam (1984), Metzner and Bean (1987), Pascarella et al. (1983), Pascarella and Terenzini (1979), Pascarella et al. (1986), Terenzini et al. (1981), Thomas and Andes (1987), Thomas (1987), and Voorhees (1987).) Justification for this type of study rests in the assertion that most losses occur during the first transitional year.

An extensive review of attrition and retention literature by Bean and Metzner (1985) identified key variables found in other studies. They reported that defining and background variables (age, enrollment status, residence, goals, previous academic performance, ethnicity, and gender) are important variables with which to predict retention of non-traditional students. These combined with environmental variables (finances, hours of employment, outside encouragement, family responsibilities) and social variables help to refine predictive capabilities. Bean and Metzner stress that for non-traditional students, defining and background variables may provide the best prediction of retention.

A study by Braun (1981) reports significant relationships between geographic/economic/educational groupings of counties (through cluster analysis) in the state of Kentucky with attendance, persistence, and transfer in public higher education. Braun states that persistence, and higher education is a result of background variables such as population of home county, proportion of the population living in a rural setting, sources of income, characteristics of high school graduating classes, and geographic location of the home county. His study notes that persistence in community colleges is not significantly related to the grouping of counties, whereas, it is significant for the state's universities.

Doan et al. (1986) and Losak (1986) argue that persistence or degree completion are not valid measures of success at 2-year colleges. Self-improvement, career advancement, vocational certification, and transfer serve as entry motivations which are not easily measured under traditional success criteria. With the influx of more non-traditional students into colleges and universities, this pattern may extend to 4-year institutions.

Bean (1983), Doan et al. (1986) and Terenzini (1987) propose that student intentions at entry must be considered when determining successful retention. Bean stated in his industrial model of student attrition that entry "intent to leave" was a primary predictor of whether a student continued in a higher education institution. Other studies indicate that a student's degree of goal commitment is an important predictor of persistence (Williamson and Cramer, 1988; Pascarella et al., 1986; Voorhees, 1987). Criteria of success need to be well-defined and sensitive to the goals of in-coming students.

Results of the 1972 National Longitudinal Survey (NLS), as reported by the U.S. Department of Education, Center for Education Statistics (1986), provide data on the progression of high school graduate through higher education. In this study of baccalaureate degree recipients, 49 percent of degrees were awarded in 4 academic years and 51 percent required more than 4 years. Nearly a fourth of the 4-year graduates required 6 or more years to complete their degrees. The results of this study indicate the need for an extended success measurement beyond 4 years for senior colleges and universities. Unfortunately, the study did not encompass nontraditional community college students.

Kentucky Multi-Institution Retention Model

The proposed model uses many of the elements described by other authors. Figure 1, "Multi-Institution Retention Model" is a flow model. It shows the potential paths a student entering higher education can follow regardless of the reasons influencing movement within the system. Simply stated, a student enters the higher education system and either 1) continues in the system, or 2) departs. Multiple institution attendance, stopout activities, multiple degrees, and outcomes are explained in this simple model.

MULTI-INSTITUTION RETENTION MODEL

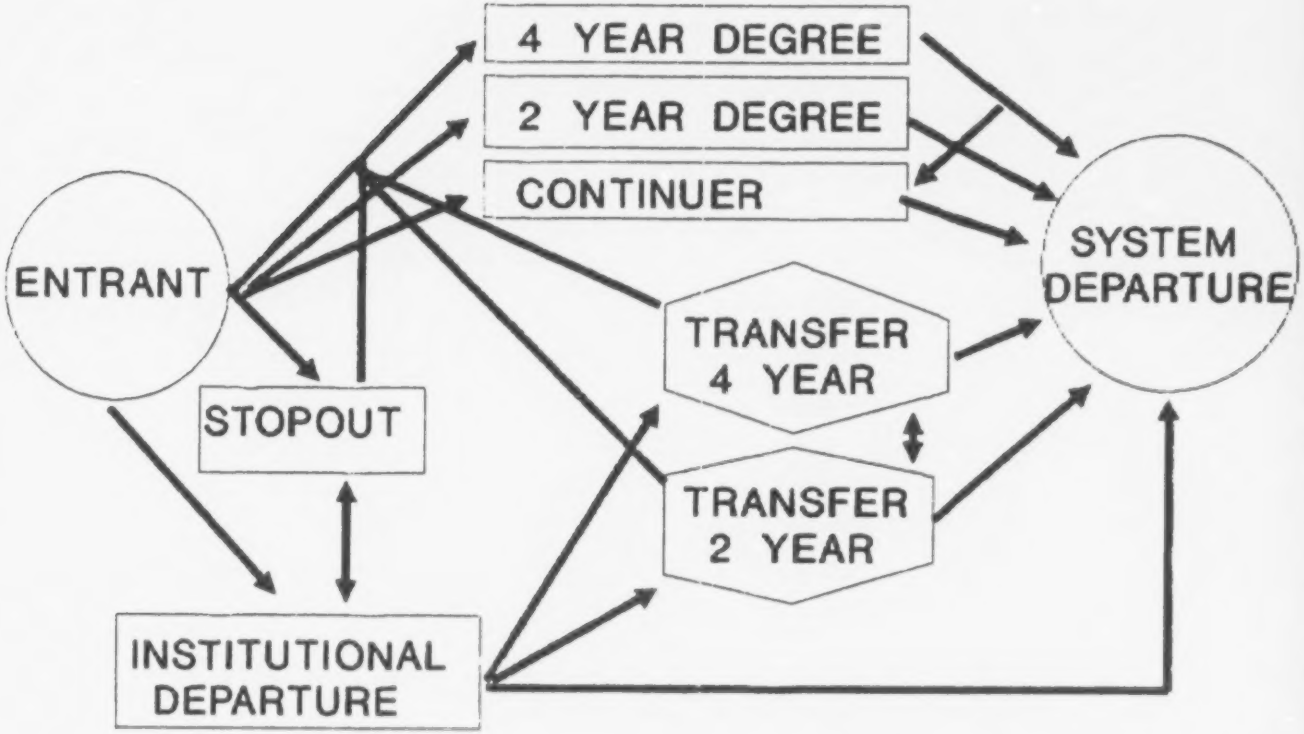

Figure 1

MULTI - INSTITUTION RETENTION CONCEPTUAL MODEL

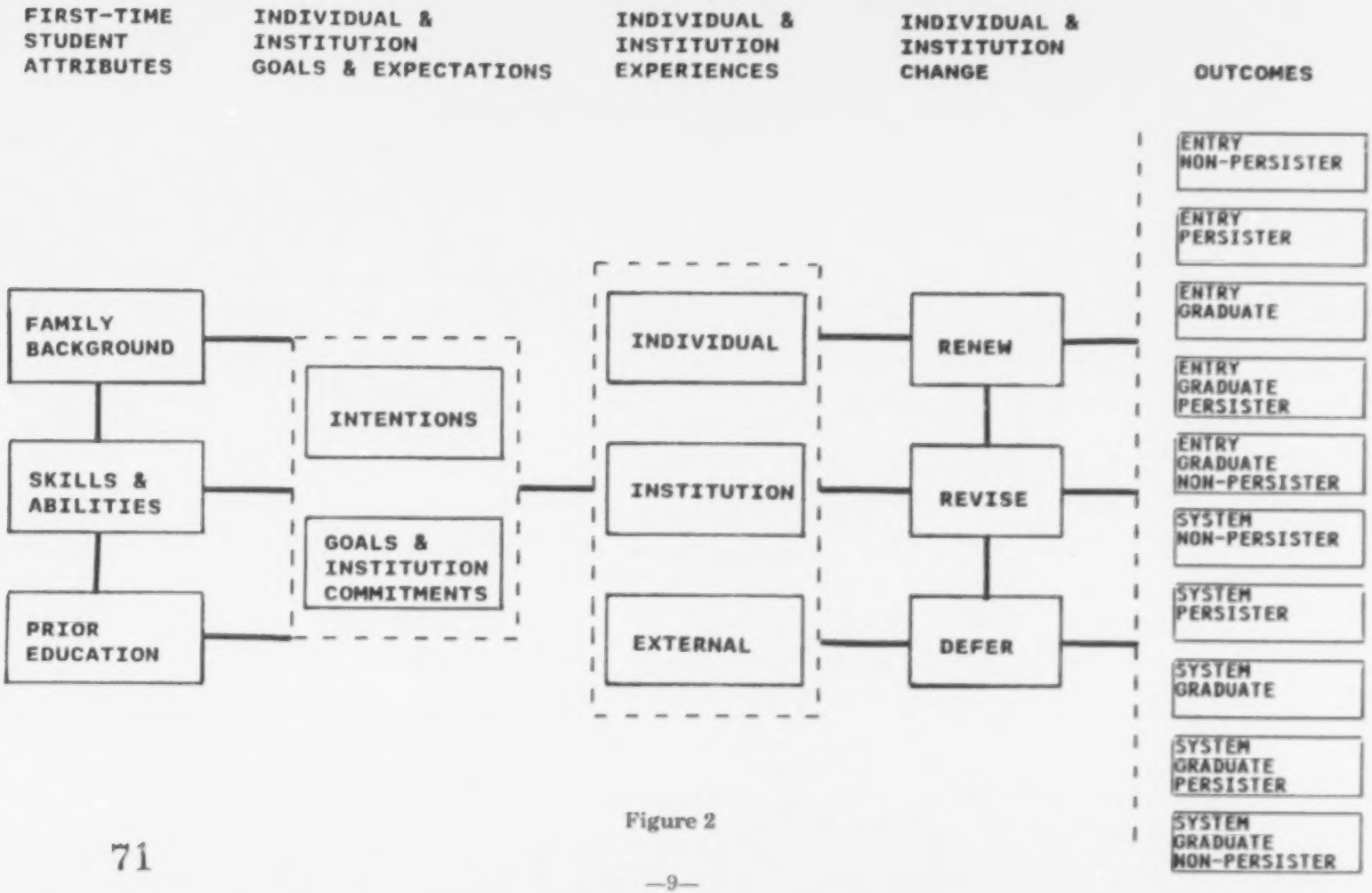

Figure 2

The Multi-Institution Retention Conceptual Model (Figure 2) is more descriptive. It presents the reasons a student might depart from a higher education system. A first-time student brings to the institution and system his/her family background, skills and abilities, and prior education. These factors intermix and influence the student's intentions and goals. Institutional intentions, goals, and commitments (as exhibited through program emphases) act in various degrees of congruence with the student. The individual and institution interact while external elements, which may influence either or both parties, act on the student and institution's relationship. Individual and/or institutional change brings about a decision to renew or continue the relationship, revise (stopout, dropout, transfer, or alter either or both parties), or defer action. Actions taken by the institution and/or individual lead to ten outcomes.

The model recognizes the social, academic, and background elements emphasized by Tinto (1987) and Bean and Metzner (1985) but focuses more on intent and choice. The multiple outcomes are more descriptive than simple retention/attrition models and is more applicable to the non-traditional students increasingly found in higher education. It does not establish a non-traditional success outcome as stressed by Losak (1986) who contends that many students enter institutions for personal reasons which do not include continued persistence or graduation.

The multi-institution retention model does not assume that a graduation goal is the only successful exit point from higher education. Although this study concentrates on three traditional outcomes (graduation, persistence, and non-persistence) it also controls for intent on entry. Students change their minds as they experience higher education. Similarly, institutions decide that some students belong elsewhere.

Methodology

A variety of demographic, academic, and personal factors were studied to determine their influence on retention at each institution and within the public higher education system. Data were drawn from statewide computer data files consolidated at the statewide coordinating board for higher education (CHE) and from annual American College Testing (ACT) data tapes. The CHE data sets were produced from enrollment and degrees awarded data tapes given to the board each semester by the colleges and universities. The ACT tapes provided specific pre-enrollment data on each student's personal and academic background. All entering students are required to take the ACT as a precondition to seeking admission to an approved degree program. From these two data sources, a master retention data set was established; it permitted students to be tracked through six years of public higher education.

First-time freshmen from fall 1981 were tracked through spring 1987. The fall 1981 first-time freshman class was important because its members could be tracked for six years. Students were tracked through each semester by a direct match of social security numbers within and among public institutions of higher education in the state. This approach assured that students who transferred to other institutions within the state system were included.

Variable Groups

The Multi-Institution Retention Conceptual Model identifies three categories of background variables, two types of expectation variables, and three categories of experience variables. The background category is composed of family, skills and abilities, and prior education variables. Family variables included in this study are sex, race, income, county of origin, marital status, type of community, percent of county population in poverty, and number of siblings under 21 years of age. The skills and abilities variables are ACT subscores in English, math, natural sciences, social science, and the composite score; and student perceptions of his/her need for academic help in writing, reading, math, and study skills. Prior education experiences are characterized by the student's involvement in high school activities and academic performance. Variables in this category include number in graduating class, percent of students from same racial background, class rank, overall high school GPA, type of high school program, number of years in each subject area, advanced placement courses taken in high school, high school extracurricular activities, and out-of-class accomplishments and activities.

Expectation variables are measured by data collected prior to enrollment in higher education. Students were asked to report expectations about their college experiences. Variables include type of institution, preferred cost, size, importance of selection factors, extracurricular plans, work plans while attending college, estimated first year GPA, degree of certainty about college major, degree of certainty about occupational goal, desire for advance placement, desire for credit by examination, and highest level of education expected to be completed. Institution expectation variables are not measured in this study. Such things as admissions standards, characteristics of previous students and graduates, allocation of resources, stated missions, and recruiting practices are institution expectation variables.

Experience variables are comprised of three types: student, institution, and external. Measures of student experience are done two ways: 1) comparing student expectations and desires with actual outcomes, and 2) actual enrollment characteristics. Differences in costs, size and distance from home are in the first category; first semester credit hours and average credit hours are in the second.

Institution experience is composed of variables which quantify institutional characteristics during the students' first year. Specific variables are the institution's allocation from state funds, percent of full-time employees who are teaching faculty, all-ranks faculty salaries, and tuition rates. External experiences are those factors over which the student and institution have little control. Differences in county poverty rates and differences in population density are the two variables used.

Each county in the state is classified according to urban density. Counties which have at least two-thirds of their population living in an urban environment are classified as "high" urban. Counties in which the urban population is between one-third and two-thirds of the population are classified as "medium" urban (suburban). Counties less than one-third urban are classified as "low" urban (rural). Institutions and students are classified by their county type.

Universities are also certified by their mandated mission and metropolitan size. By regulation, there are four types of institutions in the state system: a comprehensive statewide research university, an urban research university, a liberal arts institution, and regional universities. The regional institutions are further classified by their urban density which yields two subcategories: urban and non-urban regional universities.

Percent in poverty is used to determine if a regional or county attribute affects higher education retention. Counties where more than 25 percent of the population are living in poverty are classified as "high" poverty areas. Counties in which between 15 and 25 percent live in poverty are "mid" poverty areas. Counties with less than 15 percent in poverty are classified as "low" poverty. Again, students and institutions receive a designation through their counties.

Multiple Outcome Variables

The flow patterns of college students through public higher education in a state system help determine (1) patterns of attendance among various demographic groups, (2) patterns of student persistence within institutions and public higher education, and (3) completion rates (degree received) among the various groups. The patterns also permit student tracking to determine varying levels of success. Although the attainment of a degree is not the only measure of success in higher education, this study focuses on traditional persistence and graduation patterns. The specific retention categories in this study fall into three main groupings:

PERSISTERS

(1) ENTRY PERSISTER—NON-GRADUATE: Student continues to attend the institution where he/she initially enrolled.

(2) SYSTEM PERSISTER—NON-GRADUATE: Student transferred from the initial institution and continues to attend elsewhere in the system.

(3) ENTRY GRADUATE PERSISTER: Student continues to attend his/her entry institution after earning an associate degree.

(4) SYSTEM GRADUATE PERSISTER: Student transferred with an associate degree to another institution in the system and continues to attend.

NON-PERSISTERS

(5) ENTRY NON-PERSISTER: Student left the entry institution prior to earning a degree and did not continue elsewhere in the system.

(6) SYSTEM NON-PERSISTER: Student transferred to another institution and then dropped out before earning a degree.

(7) ENTRY GRADUATE NON-PERSISTER: Student received an associate degree and left his/her entry institution without attaining a baccalaureate degree.

(8) SYSTEM GRADUATE NON-PERSISTER: Student transferred with an associate degree to another institution in the system but did not continue.

GRADUATES

(9) ENTRY GRADUATE: Student graduated from the entry institution and did not attend another college in the system.

(10) SYSTEM GRADUATE: Student graduated after transferring to another institution in the system.

The analysis of data in this study was accomplished through (a) constructing retention matrices which are subject to chi-square analysis, and (b) applying discriminant analysis to determine the factors which best predicted the various levels of retention. These approaches were selected to simplify the reporting process so the research can be easily understood and directly applied to the improvement of retention in higher education.

Sample

The sample for this study included all first-time, full-time freshmen, 18 years old and younger enrolled in public higher education who had graduated from high school, taken the ACT, and stated an intent to pursue a baccalaureate or higher degree (n=4,850). This restriction accounted for approximately one-fourth of Kentucky first-time freshmen who started in 1981 (35 percent of university first-time freshmen and 26 percent of all public higher education first-time freshmen). These limitations make the results more compatible with previous studies and established a baseline for future studies using other stratifications.

It is probable that other environmental variables such as the social and work experiences of older, non-traditional students (not measured in this study) have a strong influence on college retention. Limiting the study to recent high school graduates reduced the possibility of these confounding effects. It is probable that motivational and expectation changes would not have been reflected in ACT data if there had been a wide time lapse between the time the test was taken and when the student chose to attend higher education.

Research Questions

The variables are analyzed to answer the following questions:

(1) What are the characteristics of students who complete their intended degree, persist without having earned a degree, and those who do not continue in higher education?

(2) Are there reliable predictor variables for estimating the probability for graduation of a student at each institution type and system-wide?

(3) What are some possible retention strategies that higher education planners should consider?

Results

Previous research has demonstrated that certain variables appear to influence retention rates; specifically, background variables such as race, sex, age, degree status, and average course load have been identified. Several studies have noted the importance of motivational measures (especially entry intent).

Statewide retention and graduation data provide a more complete measurement of success in higher education. The results of this study are descriptive of graduates, persisters, and non-persisters. Discriminant analysis of these data provides a predictive equation for determining a student's likelihood as a graduate or non-persister from pre-college enrollment information. This targeting permits the better use of limited resources to improve higher education retention rates.

(1) What are characteristics of graduates, persisters and non-persisters?

Chi-square analyses are conducted on background, expectation, and experience variables and classified as highly significant (hsig = Chi-square probability <.001 and Phi >=.10) and significant (sig = chi-square probability <.001 and Phi below .10). A higher Phi value indicates that chi-square significance is not due to a large number of cases.

In general, it appears that graduates and non-persisters are most dissimilar while persisters share mixed characteristics with the other two categories. Background variables show the following significant difference about graduates, persisters, and non-persisters:

—Graduates are more likely to be female.
—Blacks are more underrepresented in the graduate group.
—Graduates come from families with higher income levels.
—Marital status is not different for the three groups.
—Graduates have fewer siblings under the age of 21.
—Graduates are less likely to originate from urban areas.
—Graduates originate from poorer counties.
—Graduates score above the national mean on the ACT.
—Graduates perceive less need for extra help in college.
—Graduates study more years of math in high school.
—Graduates are more often in the top quarter of their high school class.
—High school GPA's of graduates are more often above 3.0.
—Graduates are more likely to take advanced placement courses in high school.
—Graduates participate in more high school activities.
—Graduates are more likely to participate in community activities.

Expectation variables portray what students perceive to be true prior to their enrollment and experience in higher education. In general, expectation variables do not differ significantly among graduates, persisters, and non-persisters. Chi-square analyses revealed the following:

—Students are similar in the type of institution they want to attend, preferred cost, preferred size, selection factor importance (except cost which is more important for persisters than graduates), college extracurricular plans, certainty of major, and certainty of career choice.
—Graduates are less likely to plan to work.
—The first semester college GPA estimates of graduates are higher.
—Graduates are more likely to desire advanced placement in college and credit through examination.

Experience variables measure the differences in plans and reality. Student expectations are contrasted with known factors at their respective institutions. It is hypothesized that large discrepancies may encourage attrition. The results of Chi-square analysis are summarized below:

—Differences in estimates of distance from the student's home to the institution and differences between actual college costs to planned costs are not evident among the groups.
—Graduates are slightly different from persisters (sig) in estimating the size of the institution they eventually attend.
—Graduates take more credit hours on entry to college.
—The average credit hour load is significantly higher for graduates.
—Persisters attempt significantly fewer hours (hsig) than non-persisters or graduates.

(2) Are there reliable predictor variables of higher education retention?

Discriminant analysis indicates that predictions can be made with background, expectation, and experience variables available prior to entry. Missing values and exclusion of the persister category reduced the discriminant analysis sample to 4,252. An F probability of .05 reduced the number of variables from 52 to 13, background variables included after the stepwise discriminant analysis, chi-square review, and parametric discriminant analysis are: high school GPA, ACT and natural science ACT scores, self-reported class rank, income of family, number of siblings under 21, semesters of another foreign language (other than French, Spanish, or German), semesters of high school natural science courses, and number of high school extracurricular activities. Expectation variables which load are: number of college advanced placement courses desired and planned hours of work per week while enrolled. Experience variables include distance from the home county to the university and number of first semester enrollment hours. The variables for "first semester enrollment hours" is retained because most students pre-register and the data are available prior to matriculation but "average hours enrolled" (an excellent predictor of graduation) is dropped from the discriminant analysis because it is information that would not be available during the first semester.

A discriminant analysis formula is generated for the system and correctly predicts group membership (graduates and non-persisters) in over two-thirds of the cases (TABLE 1). It correctly assigned non-persisters 65 percent of the time and graduates 69 percent of the time for a total correct of 67 percent. The error rate is higher than desired (33 percent incorrectly classified) but the predictive capability remains useful.

The ability to forecast graduation or non-persistence is accomplished by using a posterior probability of membership formula. The constants, linear discriminant function scores and means for each variable, and steps necessary to determine which group a student would enter are listed in Table 2. Proportions exceeding .5 for either graduates or non-persisters cause a student to fall into the group. Using this process, administrative personnel can identify high and low risk students.

The application of the discriminant analysis to individual institutions yielded mixed results. Successful classification ranged from 66 to 82 percent. A more consistent discrimination is achieved by grouping institutions by mission and density of the institution's county population. Five categories are derived: comprehensive statewide research university, urban research university, rural regional university, urban regional institution, and liberal arts university. The results show that the statewide discriminant analysis formula predicts graduation and non-persistence most successfully at the urban research, urban regional, and liberal arts institutions (TABLE 3). Because of the low n at the liberal arts institution, the results must be interpreted with caution.

TABLE I
Discriminant Analysis Classification Summary

		Graduate	Non-Persister	Total
Graduate	n	1479	663	2110
	%	69	31	
Non-Persistder	n	737	1373	2142
	%	35	65	
Priors		.4962	.5038	
PERCENT CORRECT = 67				

Institutions are also grouped entirely by urban density. Urban institutions (institutions in counties with 75 percent or greater urban population density), suburban universities (situated in counties with 50 to 74 percent urban populations), and rural institutions (less than 50 percent urban) are run against the same statewide discriminant analysis formula (TABLE 4). Missing cases reduce the n to 4,119. The data show that the formula is not more successful in correctly identifying graduates and non-persisters at the different types of institutions by urban density.

TABLE 2
Classification Matrix

Variable	Graduate* Linear Discriminant Function	Non-Persister* Linear Discriminant Function	Graduate Mean	Non-Persister Mean
GPA	14.074	13.392	3.2	2.8
ACT Composite	.0240	-.0596	20.1	17.3
Planned Work Hours	.2078	.2342	8.8	11.2
High School Rank*	13.929	14.302	1.4	1.8
First Semester Credit Hours	4.940	4.856	15.2	14.6
Family Income	.00029	.0003	41549	39,111
Number of Siblings	.6898	.7726	1.4	1.6
Semesters of Other Language	.2378	.0342	.2	.1
Number of College Advanced Placement Courses Desired	.5666	.5000	1.9	1.6
Distance From Home County to University	.0046	.0028	59.1	50.5
ACT Natural Sciences	.3278	.3631	22.4	20.1
Semesters of Natural Sciences	2.335	2.242	3.0	2.7
Number of High School Extra-Curricular Activities	.5371	.5040	4.2	3.7

*High school rank is on a 4 point scale with 1 = highest and 4 = lowest.
*To derive a predictive probability of a new student to each group:

1. Multiply the new variable value times the linear discriminant function;
2. Sum the results of the multiplication for graduates and separately for non-persisters;
3. Add the respective constant to each and derive two discriminant scores;
4. Use log exponent (2.71828) with each discriminant score to derive an exponent score;
5. Sum the group exponent scores; and
6. Divide the exponent score by the sum of the exponent scores to derive a probability for each group.

(3) What are some retention strategies suggested by the data?

The data provide further support to the strategies suggested by Bean (1986), Kowalski (1984), and Gardner and Nazari-Robati (1983). The results of the data analyses and suggestions generally fall into five strategic categories:

1. Provide academic support services which are proactive. This is best accomplished by giving retention a high institutional priority. Retention activities can take the form of a strong orientation program for both faculty and students, peer and faculty tutoring, improved academic advising, clearly stated institutional goals, continuous re-evaluation of student support services, and prescriptive assessment and course placement of all incoming students. Relationships with elementary and secondary education should be developed so academic bridges can be built earlier. Graduates, persisters, and non-persisters differ in high school academic preparation and achievement. An expectation of higher education can be fostered through a sharing and intermixing of resources from all levels of education.

2. Provide a caring, student-centered environment. Personal and professional help should be readily available. Student activities should be clearly focused and marketed to those student subgroups who would most benefit from the events. Student interest groups should be stressed and every effort made to encourage their formation and continuation. Faculty and staff need to interact with students in genuinely caring ways. Institutional policies, procedures, and communications should stress a student-centered environment.

TABLE 3
Institutional Mission and Population Density
Discriminant Function Classification Summary

University Type	n	% Classified Correctly Graduates	Non-Persisters	Total
Comprehensive Statewide Research	1095	75	58	68
Urban Research	614	61	78	71
Urban Regional	1038	62	76	70
Rural Regional	1471	74	58	66
Liberal Arts	34	75	86	82
TOTALS	**4252**	**65%**	**69%**	**67%**

3. Provide financial services to students in need. A proactive student financial aid service combined with a strong campus jobs program may help many students who would otherwise depart. Non-persisters have less funds available from their families and are often forced to work more hours in order to attend college. Cooperative education/work efforts need to be developed at an early point in a student's career so he/she can further appreciate the value of a college education. When possible, campus employment should be used to provide needed support. This procedure will keep students involved with the college and lessen the chances that external employment will cause the student to dropout.

4. Activate a strong career development program as early as possible. Outreach to elementary, middle, and high schools should include emphases on getting as much information on higher education as possible. Well-orchestrated and publicized career development processes and activities should be available on campus at traditional and non-traditional times. Testing and assessment services should be provided at minimal or no cost to encourage student use.

5. Provide multiple levels of academic success. Short and longterm education completion points should be developed. Ideally, student academic contracts should be developed, evaluated, revised, and followed by the institution and students. There are situations which will cause students to leave an institution. Everything that can be done to make the exit process a positive experience should be done. Issuing certificates of course completion, sharing readmission guidelines, and writing personal letters asking the student to re-enroll are some of the steps that can be taken. An institutional commitment to serving students will improve the chances for a student's return.

TABLE 4
Population Density
Discriminant Function Classification Summary

University Type	n	% Classified Correctly Graduates	Non-Persisters	Total
Urban	1863	68	68	68
Suburban	1645	68	67	68
Rural	611	78	56	68
TOTAL	**4119**	**69%**	**66%**	**68%**

Conclusions

This study deals with a limited, traditional subset of students who attend higher education in a state. The findings demonstrate statistically significant differences in graduates, persisters, and non-persisters. Graduates and non-persisters differ most. Persisters share common characteristics with graduates and non-persisters but are most similar to non-persisters. Targeting retention efforts at non-persisters potentially show the greatest return on investment.

Graduates are significantly different from non-persisters on many key variables. Graduates are more likely to be female, white, from higher income families, from poorer counties, from families with fewer siblings, from rural counties, higher scorers on national standardized tests, students with better high school GPA's and ranks, completers of a college preparatory curriculum, employed fewer hours while in college, enrolled for more credit hours on entry, and enrolled for more credits each semester.

Non-persisters are similar to graduates on many of their expectation variables but differ significantly on academic variables and work plans. Further analysis show that non-persisters are similar to persisters in pre-college test scores, high school GPA, high school rank, and type of high school curriculum taken.

Academic variables are a primary difference for the three groups. Graduates show a pattern of high school success, expect success in college, and achieve their starting goals (graduation with a bachelor's degree). Persisters and non-persisters show less high school success, have lower expectations about academic success in college, and defer, delay, or abandon their beginning college goal of achieving a bachelor's degree.

Practical Considerations

It is possible to predict group membership as either a graduate or non-persister using the loadings from the discriminant analyses. Predicting persisters is problematic because of the characteristics they share with the other two groups. Effective resource management demands that institutions recognize potential group memberships and strive to move students from less successful to more successful categories. For non-persisters, the initial goal should be to move them to persistence. This could best be accomplished by having non-persisters reduce the number of credit hours carried (part-time versus full-time), providing academic skill development in math and social sciences, and providing more financial assistance.

The movement of persisters toward graduation will entail more diverse efforts. A general academic malaise will have to be overcome. Weaknesses in English, math, natural sciences, and social sciences will need to be remedied. The necessity for external employment should be reduced for persisters so they can focus on education. One approach is to provide college employment so the student realizes some income without being tempted to discontinue higher education.

This study provides verification of many existing variables in retention research. The large, ongoing, student-specific database is a reliable source for the analysis of key retention variables. Specific changes in how institutions view their retention roles are necessary if graduation and persistence rates are to increase.

Graduates are different from persisters and non-persisters primarily in academic preparation and availability of financial resources. To achieve higher levels of academic success, more must be done to move students up the retention scale (as proposed in the 10 levels of retention outcomes). Most of the academic factors should be achieved prior to the student's enrollment. Because of this, colleges and universities have a vested interest in improving the preparation students receive from K-12 institutions. Support at earlier levels of education will help ensure higher attainment levels in postsecondary education. When possible, resources and personnel should be used to enhance education at all levels.

There are multiple levels of attainment in higher education. Retention and success in college are multi-dimensional. The various levels of achievement require articulation and commitment between students and institutions. Students entering colleges and universities articulate their intents prior to entry and renew, revise, or defer their goals as they experience higher education. Effective institutions undergo a similar self-assessment. Retention plans, policies, and actions will not ensure goal achievement by all students, but a lack of such plans, policies, and actions will guarantee that fewer students achieve their entering goals.

Constraints

The completion of the retention study brought about the building of a large retention database. Several serious problems emerged as the database was built and tracking was completed. The problems heightened the need for an inclusive yet simple, direct, and easily verified model.

First, students are a varied and interesting lot. They do not follow certain limited patterns of attendance. Through the analyses, it was discovered that some students started and were enrolled at several institutions simultaneously. Others transferred regularly between public and independent institutions. Students consistently chose diverse enrollment patterns. Because the Council lacked student specific data from independent and out-of-state institution, many students were simply lost.

Second, incomplete data are the norm. Student key fields such as names and social security numbers sometimes changed. Many of the students lacked ACT scores, despite a state requirement to provide them for admission, and those who did have ACT scores oftentimes did not answer key personal and motivation questions. The intent of students for attending higher education was sometimes missing. Some students continually changed majors from semester to semester (which sometimes was not reflected in the provided data).

Third, the retention database is expensive to build and maintain. Constructing a new database each year to follow students for seven years was an expected outcome of this project. The 1981 data were initially run for a six year period. Due to public support shortfalls for higher education, administrative costs for reconstructing the 1981 data into a seven year database were too high. Similar restrictions reduced the feasibility of conducting the analysis annually. Instead, a new, less costly, and simplified retention database was proposed.

The retention database uses a snapshot approach. An entry class is tracked for seven years and classified at the end of the period as graduated, persisting, or non-persisting. Rather than following dropin-dropout patterns on a semesterly basis, an end-of-period view was taken. Graduation data was the only item viewed each semester. Dropped from the database were the ACT data which required memory intensive matching processes. Instead, intent data were captured using academic major codes. Several of the affective elements captured in the 1981 database were lost because of the dropping of the ACT. However, by running the 1981 programming for different classes every three years, the affective intent information will still be updated at a greatly reduced total cost.

Snapshots of students after the first year of attendance are also being used. Data are broken down by race, age, full-time, part-time, academic intent, and institutions. The extension of these data for the seven year period are the direction of the project. Results from the initial runs of the new system should occur in the summer of 1990.

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Community College Journal for Research and Planning
Volume 7, Number 2

THE ROLE OF INSTITUTIONAL RESEARCH IN THE PLANNING AND DECISION-MAKING PROCESSES

James M. Anderson and Michael J. Viera

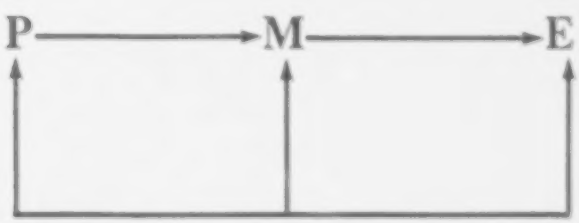
Until only a decade ago most colleges and universities planned no further ahead than the next year's budget with maybe an architectural model of some possible future plan to guide them in preparing for the future (Mayhew, 1979). When planning was done it was most commonly of an incremental nature that closely tied the academic institution's future to the past with limited possibilities for innovation or change in direction. In the 1950s and 60s the profession of planning was seen as most suited to three areas; city planning, transportation planning and planning for various state and federal governmental agencies. As a result of this perception, few planning graduates went into economic planning. However, during the 1960s the Planning, Programming and Budget (PPB) system used by Robert McNamara, while in the auto industry, was applied by him to the Department of Defense during his tenure as Secretary. Beginning in 1965, President Johnson extended PPB to all federal civilian government agencies and long-range economic planning began to replace incremental planning. While higher education was initially slow to make the shift from incrementalism to PPB and its various offshoots such as Planning, Management and Evaluation (PME), it was generally recognized that the high level of competition in higher education in the 1980s was not adequately addressed by incremental planning. "Incrementalism is an inherently conservative approach to change that does not lend itself to rapid action and nimble changes of direction." (Keller, 1983).

Charles Kinnison developed the PME model as shown in Figure1 in 1978. He defined the elements of his system as follows:

> **Planning** is the ongoing process by which an institution establishes or reaffirms its mission and determines its derivative goals and objectives.
>
> **Management** is the set of administrative processes and techniques that are used to achieve the institutional goals and objectives derived from the planning process.
>
> **Evaluation** is the process of assessing the actual performance of the institution in terms of the goals and objectives derived from the planning process.

Figure 1. A Planning, Management, and Evaluation (PME) System.

Note. From a paper presented by Charles Kinnison, "Planning in Two-Year Colleges," presented at the National Center for Research in Vocational Education Conference, Columbus, Ohio. 1978.



According to Kinnison, the PME system helps an institution to first determine where the institution is headed (planning) and then to manage its affairs in a manner that will allow it to get there. The evaluation component enables an institution to determine the extent to which it has reached or not reached its anticipated goals and objectives. The PME process is both cyclical and integrated in nature. Research, in the PME model is contained in both the planning component as "data-gathering" and in the evaluation component as "measurement of results achieved."

A planning system should not focus on the production of a paper plan, or what some writers in the field have referred to as a shelf document. Dressel, Johnson and Marcus (1971) suggest that the internalization of the process producing the plan is far more important to the health of the institution than the plan itself. It is the process that should be looked at rather than simply focusing on the end product in order to determine the health of the institution. Sometimes these different perspectives on how the planning process should occur are the result of different professional perspectives. For example, a staff planner may generate a very different view on what makes for successful planning than will a CEO. The staff planner's viewpoint is likely to be that planning should be the principle manner through which an institution's future is described and implemented. Whereas the CEO's perspective is likely to view planning as one tool among many through which management of the institution is enhanced.

By training, planners tend to focus on prescription, i.e., the idea that certain decisions be made if certain planning conditions are met. This tends to be a logic-driven system that follows what we are calling a research-driven model (Figure 2). In this model, data drives, or at least appears to drive, the decisions of the institution. This focus on prescription is understandable when one considers the planners thinking; prescription represents the credibility of the planning profession to collect, analyze and report basic institutional data which are the core elements of the "facts and figures specialist." Alternately, CEOs and managers will place less emphasis on prescription and more on flexibility. Often managers have an idea of what needs to be done and are simply waiting for the right time to put their decisions into effect. In this sense, managers and CEOs commonly fit a decision-driven model of planning (Figure 3) where the decision having been made requires that data be generated to support the implementation of the decision.

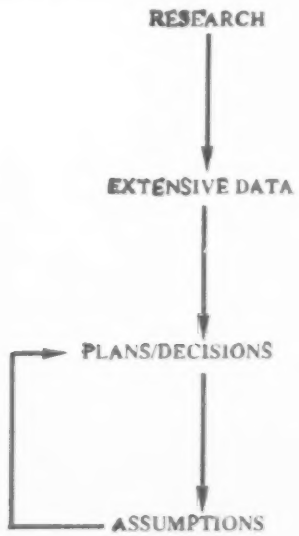
This study will review three models of planning for use in community colleges: (1) A research-driven model (2) A decision (or assumption)-driven model and (3) An open model.

Model Number One: The Research Driven Model

This model is research driven in that it relies on extensive data collection as a base for often deciding what to do (See Figure 2). An example of this model was the Yosemite Community College District's The Atlas - 1985/86. This publication was an extensive compendium of data with elaborate charts and graphs that measured and counted just about everything in the district. The Atlas was used as a resource document in the planning workshops conducted with each of the management groups. The document listed four caveats about interpreting the data it contained:

—The value of data is most often determined by the perspective of the user.
—Data has significance only as it is utilized in decision making.
—Data is unbiased; it has no impact alone.
—Data must be qualified for the context in which you intend to use it.

Figure 2. A research-driven Model.
(Note that the assumptions are usually hidden or at least not stated explicity. There is no necessary correlation between assumptions and the data.)



The planning model developed by San Francisco City College in the early 1980s also seems to fit the definition of a research-driven planning model. In fact, the District had problems with too much data being generated. The plan, as well as contingencies to plans both for expected and unexpected consequences nearly bogged down the district in a "profusion of strategies." The planning process was so open and driven by data that some of the ideas generated were ideas that proposed change in the planning process itself. The danger was that planning would merely feed upon itself without any sense of direction or movement toward district goals. (California Community College System, 1983, Fall).

Model Number Two: The Decision-Driven Model

This model is often identified by its focus on a narrow but intensive research component in support of whatever issues have initially been identified as matters of concern. For example, AB 1725, the omnibus bill revamping community college governance throughout the State of California, is the kind of external mandate that generates an intense, but focused discission within the parameters of the legislation.

Figure 3. A Decision-driven Model.
(Note that planning is a function of data, but some planning may occur without respect to the data.)

The method used by Long Beach City College, described in Models of Strategic Planning in Community Colleges (1983), seems to closely fit the decision-driven model of planning. LBCC President John McCuen noted that he initiated planning as a result of "current financial restraints" on community colleges. Similarly, it was noted in the Chancellors' report that there was a preconceived idea in mind at Long Beach that the process was important for purposes of accreditation. There seemed to be almost an overemphasis on bringing together all the different groups on-campus for the purpose of planning, almost as if planning were simply a vehicle for pulling the campus together rather than setting any new or specific direction.

At first glance the system of planning used at Yosemite Community College District would appear to best fit the data-driven planning model. This view would be supported by the publication of the district Atlas which displays in graphic form most of the information required by district decision-makers. However, once this document was completed it could be used to justify just about anything. In the case of Yosemite CCD, several support documents including district planning guides and statewide priorities were prepared to assist the management planning groups in their usage of The Atlas. A Fact Book similar to The Atlas was released by the Los Medanos District in May 1987. Its fifty pages of descriptive graphics is virtually value-free in terms of setting direction or goals for the district. This lack of apparent direction in the midst of abundant data may be reflective of the conceptualization of the latter project as a staff responsibility rather than a management responsibility. In the summary of Models of Strategic Planning in Community Colleges (1983), the comment was made that the fit between planning and each community college is dependent on the "unique characteristics" of each college. The authors seem to be suggesting that no two planning documents will be the same but rather each will reflect the unique characteristics and history of the institution.

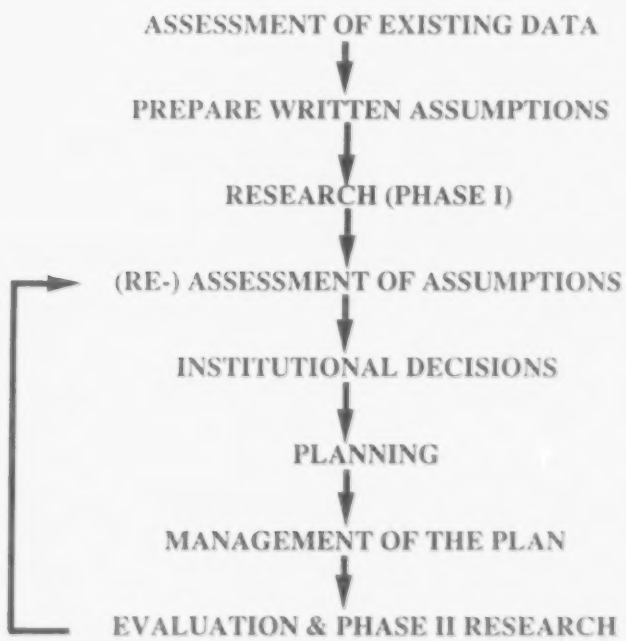
In a sense the open planning model developed at Chaffey Community College is reflective of Chaffey's own uniqueness. Following the Proposition 13 budget cuts of the late1970s, Chaffey was particularly hard hit. During the more than eighty years of Chaffey's service prior to Proposition 13 the Board of Trustees had followed a tradition of keeping local tax assessments closely in line with the actual operating expenditures of the district and thus Chaffey had only minimal reserves with which to react to the Proposition 13 tax reductions. There followed an eight year period that saw substantial lay offs of both the certified and classified staff, a needed loan from the state in order for the college to meet its monthly operating expenditures, a succession of five CEOs in eight years, and all of the inherent bad publicity and lack of public confidence to accompany all of the above. The Chaffey district was experiencing tremendous growth, yet the college enrollments dropped for five consecutive years. Many questionable decisions were made because no plan existed to provide a basis for critical decision-making. The administrators had ignored the data that did not fit the decisions they had already made. A classic example of decision-driven planning carried to the extreme. Since adoption of the open planning model and other changes, enrollments have grown from 9,500 to almost 15,000 students in less than four years!

Beginning in 1986 with the administration of President Dr. Jerry Young, Chaffey has paid off its state loan, dramatically increased its enrollments, restored staff morale, created a new organizational structure, and hired a new management team. Responding to a 1986 accreditation report that faulted the college for lack of long-range planning and direction, the Board of Trustees has made planning the highest priority goal for the district during the current year. Part of this response was the creation of the position of Vice President for Planning and Development

Model Number Three: The Open Model

In the open model, the foci shift to when research is performed in the sequence of planning what kind of research is needed, and how the data will be used once it is collected. The research in the open model is driven by a set of agreed upon assumptions rather than administrative decisions. The open planning model essentially encompasses nine steps although the first three steps need only be done the first time a plan is formulated. Steps four through nine are cyclical and on-going (see Figure 4). Research is a part of three steps in this model with two occurring only the first time the plan is developed. In an open model the process is as important as the finished product. It is designed to create consensus and support for the completed plan and to increase communications throughout the institution. The key to having research make a difference in an institution is to use assumptions to shift the relationship between the decision-makers and the research process.

Figure 4. An Open Planning Model.



The open model is built upon the comprehensive development of institutional assumptions. The role of assumptions in planning is perhaps best described by Warren H. Groff in his article "Strategic Planning:"

> An assumption can be described as a proposition describing future conditions over which the institution has little control and which will have an impact on its future.
>
> The statement of assumptions is the critical link between the analysis of external and internal conditions and the development of strategic goals. The development of assumptions forces college staff to analyze these conditions and to express their concrete implications for the college.
>
> To paraphrase Peter Drucker, a strategic plan is a collection of today's decisions that will shape tomorrow's college. Strategic planning is a process that articulates the best thinking of those involved in creating and implementing institutional strategies.

Open planning becomes a process of assumption building and testing through research and consensus. Assumptions are drafted by examining the institution's existing research and data base as well as its mission, goals, program evaluations, and external data services. The draft assumptions are widely disseminated throughout the institution for additional imput, modification and consensus-building. At Chaffey, this was accomplished through a series of workshops starting with the college trustees, then the senior management, the faculty senate, and the college council. (See Figure 5). A variety of group processes were used in the workshops. Each workshop had the benefit of the input from the previous workshop(s) so the assumptions became more polished with each presentation. The set of assumptions led to a set of questions which determined the types of data and information needed from institutional research. Once preliminary research had been completed, a plan was formulated and decisions made. Thus, there are two levels of research and assumption writing before plans or decisions are made. Once plans and decisions are made, a third level of research is conducted to assess and evaluate the plan. The results of this assessment are used to rewrite the assumptions and the process is repeated the following year. It was at the point of re-assessing the assumptions that the Chaffey College Trustees decided that a new, more comprehensive, mission statement was needed and thus developed.

McClenney (1985) states that "all strategic planning efforts center upon an institution's clear sense of mission. Institutional leaders must communicate strongly that this mission and its central focus guides the entire planning program. Similarly, all planning must be predicated upon an explicit set of planning assumptions and organizational goals to remain both relevant and realistic." In the search model (#1), decisions are made and plans formulated by an evaluation and assessment of what is usually an extensive pool of data, statistics and information. The weakness in this system is that there is not necessarily a correlation between the kinds of research that is performed and the needs and philosophy (assumptions) of the institution. If the data are inaccurate or incomplete or the wrong data sets are presented for analysis, then the plan or decisions that result are likely to be flawed. In the decision-driven model (#2), a decision can be made, and an assumption formulated, with little or no data to back up the decision. The research and data gathering and/or process results is usually focused to support the assumptions or decisions that have already been made. The research that results is usually intensive rather than extensive in nature and tends to produce a more limited data pool than the research driven model. In this model, the plan is formulated after the data are collected and analyzed. In the open model, (#3), however, the focus is on when research is performed in the sequence. The research in the open model is driven by assumptions rather than decisions.

The Open Planning Model: A Nine Step Process

Step 1—Data and information collection and assessment.

Unlike the research-driven model, the new research and data gathering is not done during this step. Existing data, information, program evaluation, institutional philosophies, mission statements, and other forms of input including state and national trends and district demographics are assessed and organized into a draft set of written assumptions.

Chaffey College
Planning, Management & Evaluation Model

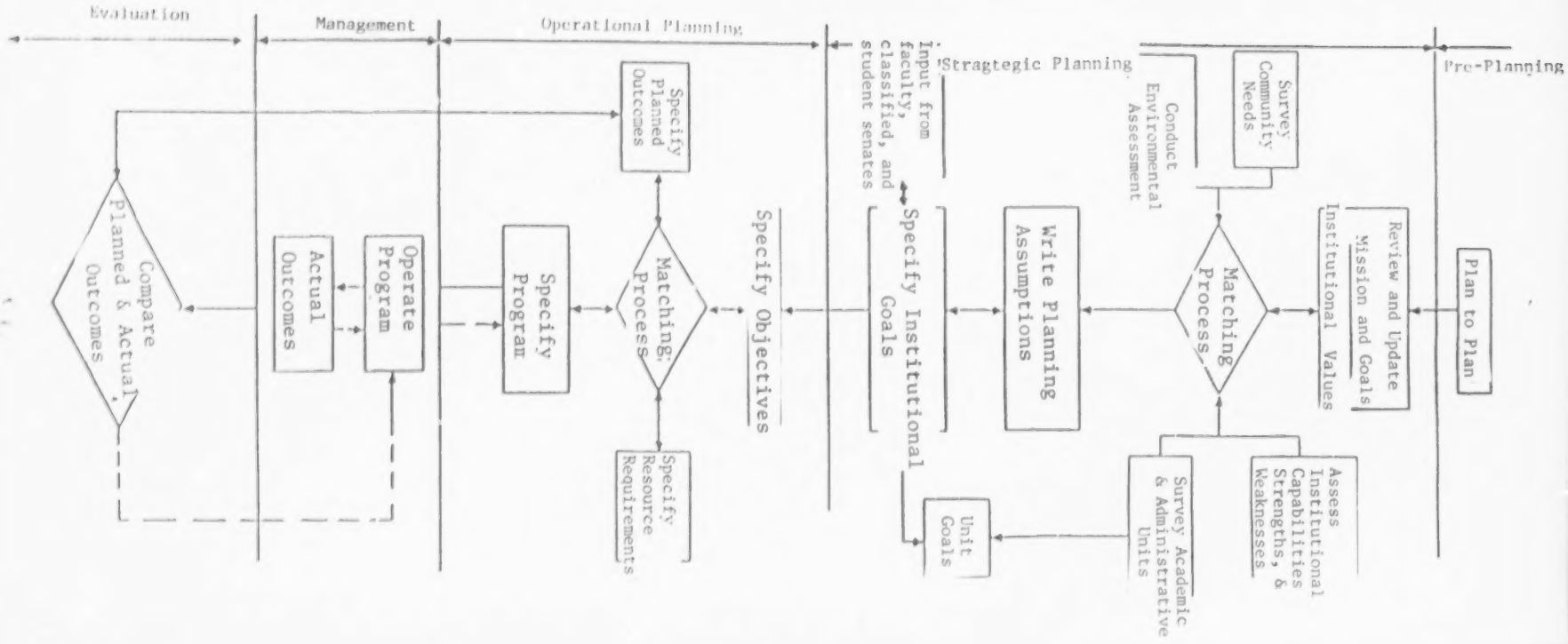


Figure 5

Step 2—Assumption development and consensus testing.

The testing of assumptions should be done at several levels starting with the institutional trustees and progressing down through layers of administration and staff. The feedback from the review process is then reassessed by the assumptions writers and a new or revised set of assumptions formulated so that they represent a general consensus of the operating philosophy of the institution. It is important here to note the distinction between this model and the previous two; thus far in the process no decisions have been made including decisions about the assumptions. The assumption process is a mechanism for focusing thoughts and action rather than setting a single goal. This process of assumption review may engender a new set of assumptions or based on the discussion among all the groups confirm the existing assumptions. Once these assumptions have been formulated they are organized into logical groupings relative to the kind of information that might support or negate them.

Step 3—Research related to the assumptions.

This step involves both institutional and environmental assessment designed to support, modify or negate the assumptions. Institutional research in this model is totally driven by the set of assumptions and would be as extensive or intensive as the assumptions dictate. Since many of the assumptions deal with the external environment, at Chaffey we thought it necessary to attempt to track a variety of information sources, trends and societal movements in order to get a sense of what was going on in the social environment that the college serves. In order to do this, we created an environmental scanning pool, or ESP for short. Essentially the pool works as a comprehensive clipping service of the many publications read regularly by a wide variety of the faculty and staff of the institution. The process was started through the circulation of a flyer that announced the project. Circulation of this flyer identified a pool of volunteers willing to participate in the project as well as a list of publications that these volunteers read regularly and were willing to scan for relevant information. To date, we are collectively scanning over 150 publications covering virtually every field of interest to the institution. One of the benefits of participating in the project is that participants are all placed on a mailing list and receive regular copies of all the information submitted to the project office for distribution.

Step 4—Assessment and re-assessment of assumptions.

A working set of institutional assumptions is formulated based on the consensus process and whatever research may have been performed to date on the assumptions. By this point, the assumptions should represent a consensus document of a majority of the institution. The assumptions should be clear, complete, concise, and as accurate as possible. Since the process is on-going and the assumptions will be reviewed regularly, it is not necessary that they be a definitive set of assumptions, but rather simply a good, working document.

Step 5—Institutional decision-making.

At this point in the process all of the available data has been collected and analyzed and a consensus reached concerning the philosophies (assumptions) of the institution. A plan can now be formulated, however, since all planning involves decision-making, initial decisions regarding the plan and the planning process itself are made at this point. For example, this is the stage where we at Chaffey College prepared a tentative table of contents, list of tables, charts and other data that we are projecting will be in the finished document, and what kind of time table might be involved in completing the remainder of the process. The purposes of making clear decisions at this point are:

1. It makes the process concrete and definitive.
2. It communicates to the members of the institution what they can expect to happen and by when. This communication is essential in continuing the consensus-building that is part of the model.

Step 6—Planning

This step involves all of the detail work associated with completing the plan . The narrative portions are written, the research is conducted and evaluated, and the various sub-components or units of the plan are collected and assembled. Given the rather extensive processes that have preceded this step, the actual production of the plan should be relatively simple. At this point it may be helpful to mention the subject of time lines. In our experience, we estimated that it would take a minimum of three to as long as six to nine months to complete this model through step six. The variables in estimating time include the degree of data and information available to the process at its beginning, the existence or lack thereof of any previous planning, the staff available to the process, and the degree of willingness of the staff and faculty to participate and support the process. An open planning model can be used to bring an institution together, facilitate communications and build consensus. The model can be adjusted to the needs of an individual institution depending on how much each of the above needs are relevant to that particular institution. The planning committee at Chaffey College decided to use ten months to formulate a complete plan. The plan is now in the eighth month and there is every indication that the process is accomplishing all of the aspects described above although it will require a month longer than anticipated to complete.

Step 7—Management of the plan.

Once the planning document is completed, the next step is implementation. From a planning standpoint, we strongly recommend that the planning document contain abundant guidelines and information about how its recommendations should be implemented, evaluated and measured. It is further suggested that a minimum of one and possibly as many as two or more evaluation periods be built into the annual cycle of the planning implementation process. These are the points at which institutional research is interjected into the process to measure progress and results. For most areas, assessment and evaluation should be a continuing process which is conducted annually.

Step 8—Evaluation and new research

At the completion of the year or phase of operation of the plan, research and evaluative instruments should be used to assess the plan. Evaluation of the progress of the plan may suggest new areas of research that should be conducted. A critical dimension of this step is the reassessment of the original set of planning assumptions based both on new data and sources of information as well as an assessment of the decisions that were made based on the assumptions.

Step 9—Rewriting institutional assumptions.

This step is a natural consequence of the previous step in which the assumptions were assessed and evaluated. If, based on new information or revised decisions, an assumption is no longer thought to be valid, then it is re-written. The re-writing of an assumption drives a new set of institutional decisions which modify the plan and its continuing implementation, which in turn drives a new level of research to assess the new assumption. This process continues on a cyclical basis as long as the plan is in operation. Actually, once the first comprehensive plan is formulated, the process could continue indefinitely and would automatically renew itself.

In summary, the open model is a comprehensive planning model that has the potential to facilitate communication, build consensus, test data, and even revitalize institutions. It is not, however, without its problems. Since it is a complex process, it can, if not managed carefully, tend to become unwieldy and bogged down without being completed. The assumption process, although designed to build consensus, may lead to increased divisiveness if the group processes related to consensus building are not skillfully managed. Open planning utilizes institutional research as extensively and intensively as is necessary to support the assumption aspect of the institution. The advantage of this model for the institutional researcher is that it commits the decision makers to utilizing the research results in a specified manner at the time the research is begun. A plan developed with an open planning model has much less of a tendency to become a "shelf document" than documents developed under less comprehensive models. The advantages and disadvantages of the various planning models proposed in this article are elaborated in the typology presented in Figure 6. In closing it seems appropriate to paraphase George Keller who notes that perhaps one of the least important products of the planning process is the plan. Although this statement may be obvious to some, it does underscore the need for the planning process to be an on-going, continuously changing organic activity. A corollary of the axiom is the proverbial political axiom, "plan early and often."

Figure 6

TYPOLOGY OF PLANNING MODELS

	RESEARCH-DRIVEN	DECISION-DRIVEN	OPEN MODEL
SOURCE	data analyst	problem identifier manager or CEO	open ended college-wide groups
ASSUMPTION	unwritten; unspecified; unfocused; little or no context	focused context accepted without questions or review; tested by data only	holistic context; assumptions become the norm
RESEARCH	based on readily available data; broad focus	data may be skewed consciously or un-consciously to fit the decision; narrow focus	driven by assumptions in continuous loop
DECISIONS	data collection may not lead to decision-making; no context for decisions	decisions based on preconceived assumptions; decision is the context	based on tested assumptions; institutional context for decision-making
OUTCOMES	"shelf document" may not lead to action	narrowly construed implementation may lead to negative reaction	tendency toward consensus
PROBLEMS/ LIMITATIONS	may be no institutional support beyond data collection	narrow focus may prevent consider-ation of more comprehensive planning needs	unwieldy process may bog down without completion; time consuming

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Community College Journal for Research and Planning
Volume 7, Number 2

PROJECTED POPULATION GROWTH AND ITS IMPACT ON THE NORTH CAROLINA COMMUNITY COLLEGE SYSTEM

Kathryn Baker Smith

The aging of the baby boom cohort is a national phenomenon, affecting nearly every state. The resulting increases in demand for services to mid-life adults and the elderly are posing some difficult problems and policy concerns for community college leaders nationwide. Community colleges provide education for adults. Therefore, the nature of the adult population is of the highest importance to college administrators as they plan programs, seek resources and implement policy. Current population projections should be used as a factor by both state and college administrators to anticipate the level and nature of needs for education and training services community colleges provide.

The simple growth rate of the population is the basic factor in anticipating enrollments—though many factors connected with changing economic conditions, the increasingly sophisticated demands which technology makes on the labor force and the availability of more leisure time also affect enrollments. From a state perspective the rates of growth of various regions of the state also will affect policy and resource allocation decisions. Finally, the changes expected in the growth of various subgroups within the population are also important to decision-makers at the college and state levels. Many of the population trends affecting North Carolina community colleges are not unique to North Carolina.

The North Carolina Office of State Budget and Management has projected continuation of modest overall growth for the state, with a relatively high rate of immigration. Mirroring national trends, the average age of the state's residents will continue to rise, the absolute number of youth aged 18-24 will fall, and the population over 65 years will increase dramatically. The population in the prime working years, 18-64, also will be substantially larger. Indeed, all of the people who will make up the workforce of the next decade have been born already and the large majority are working today. (Hudson Institute, 1987).

A Population with Fewer Youth

Analysts have been predicting that the decline in the numbers of young people in the traditional college-going ages (18-24) would have dire consequences for colleges and universities—or, from another perspective, it would relieve the state of the responsibility for subsidizing so many students. While some colleges, mostly small, have disappeared, and many others have coped with reductions in staff and budgets, most colleges have survived and many have thrived (Moore, 1989).

New forces have intervened: a college diploma is becoming increasingly more valuable in the market place, therefore a higher percentage of young people are going to college from high school: more mid-career people are seeking additional education, either to enhance their performance on the job or to change career paths; women are attending college after getting families started; and retirees are using their leisure to seek fulfillment through learning. Community Colleges have aggressively marketed their product—knowledge—to whole new groups of people, and have changed delivery mechanisms to meet the needs of these new students. With the decline in the number of 18-24 year olds traditional colleges and universities are now expanding into what was once considered the community college market: the student whose high school performance was good, but not stellar; the older student; and the non-degree seeking student.

The population statistics indicate that there will be a temporary upturn in the 18 to 24 year old cohort, but by 1992 it will drop again and the absolute numbers in this cohort will be 83,000 fewer in 2000 than they were in 1980. This implies that the trends which have already begun—toward serving non-traditional students in new ways—must continue and gain momentum if colleges are to remain in existence.

Because community colleges in North Carolina have had as their forums technical and vocational education and adult basic skills education, they have continued to grow. Changes in technology have resulted in raising the educational requirements of most jobs. In general, people who lack basic education and skills have a much more difficult time obtaining and holding a job which commands enough income to support them (William T. Grant Foundation Commission on Work, Family and Citizenship, 1988). North Carolina's basic industries, which in many cases located in the state to take advantage of a workforce which is dedicated, but not highly skilled, have faced the choice of moving to third world countries where labor is cheaper or adopting more capital intensive means of production (North Carolina Department of Community Colleges, 1987). The latter choice has been accompanied by a demand for fewer, but more highly skilled people. For the ordinary citizen with a high school education or less, factory jobs which provided a decent income are increasingly declining. Thousands have turned to community colleges to enable them to compete for the jobs which remain with their old employer, or for new, more highly skilled jobs in growth industries.

The immediate impact of the reduction of the 18 to 24 year old population has been felt in the shift from full-time day students to part-time students who attend at night and on weekends (North Carolina Department of Community Colleges [NCDCC], 1988). From 1977-78 to 1986-87 the proportion of full-time students declined from 42 percent to 27 percent. The working people who have replaced the young in classes cannot attend college full-time, hold down jobs and take care of families. More than two-thirds of community college curriculum students are working, and half hold full-time jobs.

Part-time students who are on campus a limited amount of time still require the use of the library, bookstore, counselors and other student services. Administrative services such as admissions, financial aid and student records cost the same for a part-time student as they do for a full-time student. All of the state's community colleges offer classes at night, and a number offer Saturday and Sunday classes. They are, in effect, running at least two "shifts"—an economical use of buildings and equipment, but costly in personnel. Therefore the cost per student for serving the non-traditional student is higher—and based on population projections will continue to increase.

. . . And More Elderly

The rise in the state's median age is partly the result of large proportional increases expected in the population over 65 (NCOBM, 1988b). Increased longevity and inmigration of retirees to North Carolina indicate a steady rise in this cohort. Currently, the community college system provides tuition-free education to those in this age group. In 1986-87 the system enrolled 3,612 in for-credit programs and 60,709 in non-credit classes, which included 7,099 in literacy education (NCDCC, 1988).

With the lengthening of the expected life span and the increased good health enjoyed by many elderly people, policy-makers can anticipate that more people over 65 will seek new skills by which to continue to earn wages to supplement retirement incomes. However, many more will come to community colleges for education to enrich their lives, whether in academic subjects, crafts or other continuing education opportunities. Already there has been some controversy over the community college role in providing free classes to these citizens. As the number of elderly persons continues to grow, the demand for such classes also will increase. The state will need to decide whether to continue to subsidize this service to the elderly, and whether the community college system will continue to be the providers of these services.

Minorities

When the number of new entrants to the labor force is limited, the potential contribution of every group assumes new significance. Projections indicate that the percentage of minorities in North Carolina's population will increase very slowly, remaining about one quarter of the state's population. This substantial proportion of the people, predominantly black, is very important to the state's overall prosperity. And, because the minority population is concentrated in the eastern part of the state and urban centers of the piedmont, this group is especially important to the prosperity of those counties.

Historically, blacks have acquired less education and fewer skills. As the report of the Third Century Project, sponsored by the Z. Smith Reynolds Foundation (Norton, 1987) noted, participation in college education is lower for minorities, and the gap has widened in recent years. Not only does the black population lack a college-going history, but they are more likely to suffer from barriers to participation. These include low income, and lack of transportation, child care and other services. Minority youth are also less likely to have role models in skilled occupations and so will know less about the opportunities available. Helping these students overcome such barriers requires relatively more resources, such as assessment and career counseling programs, assistance with transportation, child care and other services to support and encourage retention, completion, and job placement.

Population Distribution

The 58 institutions which make up the community college system each serve a distinct local area: 29 serve only one county, 18 serve two counties, and 11 serve three or more. The ability to tailor program offerings to the needs of the local community is one of the strengths of the community college c ıcept. As a result, each college has a unique set of problems and opportunities. Methods and cost of operation can vary significantly according to the program mix, the size of the college, and the characteristics (such as age and educational attainment) of the population served. The growth prospects of the counties in the college's service area are also important to budget and program planning.

North Carolina counties are projected to grow at widely varying rates (NCOBM, 1988a). For the State Board of Community Colleges, this means that the system will include some colleges which will be growing very rapidly while others will struggle to maintain enrollment levels. An analysis of the growth prospects of community college service areas indicates that by the year 2000 the average percentage growth of the population 18-24 in college service areas will be 11.55 percent. However, the service areas for eight colleges are projected to have a population growth of over twenty percent, while the areas for ten colleges are expected to grow less than five percent. Colleges in fast-growing areas will need to develop new programs and new facilities. However, funding is based on the prior year's enrollment, therefore, the ability to supply instruction to meet the demand may be limited. At the lower end of the spectrum, slow population growth is often accompanied by static or declining enrollment. Colleges in these area will need to develop planning strategies for phasing out programs or maintaining programs with smaller classes. These institutions will also need to be concerned with the possibility of faculty layoffs and ways to maintain modern up-to-date equipment to serve business and industry.

Growth prospects for comunity college service areas have significant implications for institutional planning. Central Piedmont Community College, the largest college in the system, is located in Charlotte, in a high population growth area where the percentage of growth is expected to be 20.26 percent. Wake Technical Community College has an even higher projected service area growth of 30.38 percent. Fayetteville and Guilford Technical Community Colleges, also relatively large community colleges have anticipated area growth rates of 9.63 and 5.65 percent respectively. Brunswick, one of the smallest institutions in the state, is located in an area where the population base for the 18-64 age group is expected to grow by a phenomenal 43.73 percent, while the population aged 65-75 is projected to grow even faster, at 46.05 percent. However, the growth prospects in many small institutions appear less rosy: for ten institutions the service area growth for the 18-64 age group is projected to be less than five percent. Six of the institutions located in these slow growth areas already have enrollments of less than 1,500 full time equivalent students.

Community colleges also serve a substantial number of people aged 65 to 75. These citizens tend to be less interested in curriculum programs and more interested in academic enrichment, practical skills and leisure time activities. Growth rates for this group will be large statewide (service area mean 13.04 percent) but again, unevenly spread across the state. While the rule is for the growth in both the 18-64 and 65-75 age groups to be similar for a few of the colleges which expect little growth in the 18-64 population, growth among the elderly will help to offset the trend. Alamance Community College and Wayne Community College, for example, can expect service area growth of only 4.21 and 1.04 percent in the midlife ages, but are projected to have 11.35 percent and 14.46 percent growth respectively among the older group.

Summary

North Carolina's Community Colleges are the people's resource for education throughout their lives. The institutions are very much oriented to the changing needs of the population of North Carolina, and are very much aware of the importance of keeping up with these changes. The new population projections will help planners and administrators anticipate the directions in which their colleges must move to remain responsive.

Based on the projections, the State Board can anticipate a growing need for making education and training services available to the large group of North Carolinians who are already in the work force and who are faced with changing skills demands. It must also expect increasing demand for skills enrichment and academic courses from the rapidly expanding senior citizen cohort. In addition, the shortage of youth and new entrants to the labor force in general will increase the need to reach minority and other groups which have not traditionally had high college-going rates.

At the local level, the population trends are mixed. While the growth prospects are strong in many areas, a substantial number of areas in which community colleges are located will experience slow or decreasing population rates. This will pose corresponding planning and management problems for the colleges located in these areas. The future cannot be predicted based on these trends or the current resource base. However, it must be stressed that planning will be essential. With proper planning the future can be exciting as well as challenging.

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Community College Journal for Research and Planning
Volume 7, Number 2

AN ERIC REPORT

ARTICULATION BETWEEN COMMUNITY COLLEGES AND UNIVERSITIES

Ruth I. Cape

The purpose of articulation is to facilitate the flow of students, coordinate programs among institutions, and minimize course duplication and overlap. This comprehensive concept includes factors such as admissions, readmission, advising, counseling, planning, curriculum and course equivalency, and credit evaluation. The following documents reflect recent literature in the ERIC system on efforts to improve articulation between community colleges and universities.

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California Postsecondary Education Commission. Progress in Implementing the Recommendations of the Commission's 1987 Report on Strengthening Transfer and Articulation. A Staff Report to the California Postsecondary Education Commission. Commission Report 88-38. Sacramento: Author, 1988. 38 pp. (ED 302 285)

In November 1987, the California Postsecondary Education Commission (CPEC) approved eleven recommendations on transfer, articulation, and collaboration between community colleges and four-year institutions. This report reviews efforts made by the California Community Colleges, the California State University (CSU), and the University of California (UC) to implement the recommendations. Section I provides background on CPEC's interest in the actions concerning transfer rates as well as on the development of the 1987 recommendations. Section 3 reviews the implementation of recommendations concerning the state's role; mandated/statewide versus voluntary/localized articulation; faculty roles; admission with advanced standing; assessment and remediation; databases and information systems; and articulated career programs. Section 3 presents conclusions, including that the UC and CSU are moving in directions and at a pace that are in accordance with CPEC's intent, while the community colleges, in part due to funding problems, are making slow progress. Appendixes detail CSU procedures for submitting proposals for new degree major programs and common core transfer curriculum documents.

Donovan, Richard A. (ED.), and others. Transfer: Making it Work. A Community College Report. Washington, DC: American Association of Community and Junior Colleges, 1987. 75 pp. (ED 281 579)

In 1983, the Ford Foundtion funded a two-part project, the Urban Community College Transfer Opportunities Project (UCC/TOP), designed to improve the transfer process from the community college to the four-year institution for urban minority students. Through partnership efforts with secondary schools and four-year colleges and universities, the 23 UCC/TOP colleges developed and implemented a wide variety of programs to enhance the transfer success of targeted groups. This monograph contains: (1) an overview of the UCC/TOP project; (2) recommendations based on the experiences of the participating institutions with respect to productive collaboration between two-and four-year colleges, two-year college and high school cooperation, student follow-up and data collection, improving the academic environment, and increasing the responsiveness of student services; (3) descriptions of the projects undertaken at each institution and (4) an afterword by Alison Bernstein, program officer from the Ford foundation.

Farland, Ronald W., and Anderson, Connie. Transfer and Articulation with Four-Year Colleges and Universities: A Report. Sacramento: California Community Colleges, Office of the Chancellor, 1989. 19 pp. (ED 303 224)

In response to state-level concern about the efficacy of the transfer function of community colleges, this report summarizes the progress made since 1984 in strengthening transfer and articulation between the community colleges in California and the University of California (UC) and California State University (CSU). Part I offers background information on the issue, highlighting declining transfer rates and low persistence and graduation rates after transfer. After noting efforts that have been made to improve intersegmental cooperation, the report examines recent trends in transfer enrollment, indicating that the number of students transferring to the UC increased from 4,858 in fall 1986 to 5,840 in fall 1988, while the number transferring to the CSU increased from 27,761 to 28,300 in the same period. Caution in interpreting the trends is advised, given that over 50% of the transfers came from only 16 colleges and that underrepresented minorities continued to transfer at a very low rate. This section concludes by identifying concerns and needs for the future. Part II reports on specific activities undertaken in 1987-88 to strengthen articulation and transfer including: (1) 2+2+2 projects among high schools, community colleges, and four-year institutions; (2) ongoing work to develop a general education transfer curriculum; (3) work to redefine the structure of the associate degree; (4) joint projects with the CSU; (5) activities of the Intersegmental Coordinating Council related to English as a Second Language instruction; (6) the Transfer Center Pilot Project; (7) efforts of the California Articulation Number Project to develop a statewide cross-referenced course numbering system; and (8) Project ASSIST (Articulation System Stimulating Interinstitutional Student Transfer). Part III presents an action plan for 1989. A list of 2+2+2 Project grants for 1988-89 is appended.

Florida State Postsecondary Education Commission. Feasibility Study of a Public/Independent Articulation Agreement: Report and Recommendations of the Postsecondary Education Planning Commission, 1987-Report 1. Tallahassee: Author, 1987. 46 pp. (ED 280 541)

In response to legislative mandate, a study was conducted to determine the feasibility of developing a comprehensive articulation agreement between public and non-public postsecondary institutions in Florida. As an initial step, state higher education officers in other states were surveyed, revealing that no state had such a comprehensive agreement. In addition, presidents and academic officers at 30 postsecondary institutions in Florida were surveyed by telephone to determine their preference for either a statewide comprehensive agreement, local agreements, or some other arrangement for articulation. Only 23% of the respondents supported the concept of statewide agreement, while 33% preferred the concept of local articulation agreements fostered by the state through the provision of guidelines and encouragement. The study also involved a telephone survey of registrars and admissions and articulation coordinators at 32 selected postsecondary institutions in Florida, which revealed that half of the public sector registrars did not perceive a need for a statewide comprehensive articulation agreement, while all but one of the independent sector respondents reported a need for such an agreement. Recommendations are included. Appendices provide relevant legislation, survey response data, examples of articulation, and a literature review.

Florida State Department of Education. The Role of Florida Community Colleges in Articulation, Articulation Study by the Florida State Board of Community Colleges' Task Force on Articulation. Tallahassee: Author, Division of Community Colleges, 1988. 133 pp. (ED 300 042)

In May 1987, the Florida State Board of Community Colleges authorized the formation of a task force to study articulation processes, programs, and activities currently in place; to identify current and potential problem areas; and to recommend further studies and the appropriate agencies to conduct them. Drawing from existing data and the findings of a national survey of state articulation systems, the task force concluded that Florida's articulation system is unique in the United States. Florida has a consciously created structure of higher education that incorporates community colleges as the primary providers of freshman/sophmore education and anticipates the movement of students among colleges and universities as the norm rather than the exception. From relatively simple beginnings, the present day articulation process has become a formalized system of statutes, rules, agreements, and activities.

The success of the Florida model is demonstrated by enrollment and student performance data showing high rates of transfer and academic success. The articulation system involves: (1) admissions components, including minimum requirements, entry testing, college/vocational preparatory instruction, feedback of performance data between institutions, and articulated acceleration mechanisms; (2) transfer of credit program articulation features, including common transcripts and course numbering, the College-Level Academic Skills Test, limited access programs, foreign language registration process; and (3) student services, including programs to improve minority student access, student financial aid, and counseling. Drawing from study findings, the task force developed sixteen recommendations to improve the system.

McIntyre, Chuck. "Assessing Community College Transfer Performance." Research in Higher Education, 1987, 27 (2), 142-62. (EJ 367 602)

Transfer education is one of the most important, most criticized, and most difficult to measure of the functions performed by community colleges. If the performance of community colleges is to be properly assessed, problems of measuring and analyzing the transfer function must be solved. This report seeks to answer several basic questions about community colleges' transfer performance, using California as a case example. The questions asked include: a) Has the number and rate of community college students transferring increased or decreased over the past two decades; and b) What factors appear to have caused variation in the number and rate of transfers during that period? This paper also seeks to show that useful conclusions may be reached even in the absence of perfect information. Many criticisms of the transfer function focus on the decline in numbers of students transferring from community colleges to four-year institutions that began in the late 1970s. This report suggests that criticism about the transfer function, insofar as it stems from the number or rate of students transferring, is unfounded. Until there is more precise information on students, research on particular problems like minority underrepresentation, students' course selection and outside employment, and the reverse transfer should prove more fruitful than looking simply at transfer numbers.

Mertes, Barbara F. Focusing on Articulation: Improving the Community College Transfer Rate. [Community College Issues 1 (2), 1985] Sacramento: California Association of Community Colleges, 1985. 16pp. (ED 301 283)

In 1985, the Commission on Instruction of the California Association of Community Colleges undertook a project to examine the problems in articulation between the community colleges and the University of California (UC) and the California State Universities (CSU). As part of the project, a statewide survey was conducted to examine the nature, extent, and frequency of articulation and the characteristics of successful articulation arrangements. Response from 103 of the 106 colleges surveyed revealed that 30% of the colleges reported positive experiences with articulation and 70% expressed dissatisfaction with certain aspects of the process. The major characteristics of successful articulation were course-by-course equivalency agreements, direct and ongoing communication, and the establishment of articulation as an institutional priority. Another component of the project was a meeting between UC, CSU, and community college representatives to reach consensus on solutions to the problems indentified by the survey. During the meeting, a number of major issues and concerns were identified, including the need to preserve diversity and flexibility among all three segments of public higher education, the need for improved communication, the importance of adequate planning time to implement new requirements, and the need for clarification of CSU and UC breath requirements. Recommendations for addressing these and other issues are included.

ADULT EDUCATION IN THE COMMUNITY COLLEGE

Most community colleges across the United States have embraced adult education as a fundamental college mission. Recent research efforts have attempted to document the scope of community college involvement in the education of adults, focusing on community service and continuing education programs, services for the elderly, and programs for groups with special needs. The following ERIC documents represent the methods and findings of studies on the educational needs of adults, state and national surveys of adult and continuing education efforts, and adults' educational needs.

Constantino, Ernesto A. National Survey of ACE Programs. Illinois: Chicago City Colleges, 1988. 34 pp. (ED 305 953)

In 1987-88, a national survey was conducted to determine the adult/continuing education (ACE) policies and practices of large, urban community colleges. Questionnaires were mailed to ACE deans at 74 colleges, requesting information about program characteristics, funding sources, personnel, curriculum review, and marketing and publicity. Study findings, based on a 49% response rate, included the following: (1) more than 85% of the ACE programs offered continuing professional education and community education and personal development courses, workshops, and seminars; (2) the most popular ACE courses dealt with computers and computer applications; (3) tuition for ACE programs ranged from zero dollars in two California colleges to more than $40 per credit hour; (4) the primary funding patterns involved combinations of state funding, cost-recovery fees, contracts with business or agencies, and grants; (5) at 35% of the colleges, the dean or associate dean had final curriculum approval; (6) ACE programs relied largely on part-time instructors, with 44% employing no full-time instructors at all; and (7) programs experiencing the largest declines in enrollment tended to be those offered at a large number of sites. Survey instruments are appended.

Cohen, Arthur M. Community College Involvement in the Education of Adults: A Progress Report Submitted to the Carnegie Foundation for the Advancement of Teaching. Los Angeles: Center for the Study of Community Colleges, 1987. 69 pp. (ED 277 428)

In fall 1986, as part of a study of community colleges involvement in the education of adults, telephone interviews were conducted with administrators responsible for continuing education and community services at 95 randomly selected public, two-year colleges. The interviews sought information on enrollment trends, funding, and course initiation in the areas of adult basic education (ABE), short-term vocational classes, continuing education for professionals, recreational and avocational courses, customized job training, distance learning, and programs for special populations. Among the major findings were: (1) 98% of the colleges offered short-term vocational courses, and 94% offered continuing education for professionals; (2) during fall 1986, the responding colleges served 271,400 adults in the seven program areas covered by the survey; (3) short-term vocational training, professional continuing education, and customized job training accounted for 49% of enrollments; (4) in terms of past and projected enrollments, ABE was the fastest growing area; (5) three factors were found to influence program trends; i.e., decisions by the college staff, decreased state reimbursement for recreational/avocational courses, and the use of off-campus facilities; (6) limited staff time was found to be a major constraint on the initiation of new contracted programs with business and industry; and (7) ABE and vocational training were the programs most often subsidized with state or federal money.

Johnson County Community College. Educational Interest and Perceptions of Johnson County Resdidents Age 50 and Over. Overland Park, KS: Author, 1989. 68 pp. (ED 300 062)

In April 1987, a telephone survey was conducted of a random sample of Johnson County adults to ascertain their perceptions of and experiences with Johnson County Community College (JCCC). In April 1988, a second telephone survey was conducted of county residents over 49 years of age to determine their educational needs and interests. Study findings, based on the responses of 283 older adults to the first survey and 207 responses to the second survey, included the following: (1) respondents expressed more interest in short-term studies, self-paced programs, and non-credit courses with no requirements other than regular classroom work; (2) over 30% indicated interest in educational offerings designed exclusively for students age 50 and over; (3) more than 50% were interested in educational activities about remaining independent, and improving and maintaining physical and mental health; (4) 53.6% said that location would affect their decision to enroll in courses; (5) noncredit courses with reasonable fees were preferred to credit courses with standard credit hour tuition; (6) 80.6% rated JCCC as good or excellent in terms of their expectations of an institution of higher education; and (7) less than 33% of the respondents were aware that JCCC provides instructional programs to businesses, individuals, and groups. Tables giving demographic information on respondents and a list of their verbatim comments are included.

State University of New York. Selected Programs for Adults in Need of Training/Retraining in Postsecondary Occupational Education: Summary Profile. Albany, NY: Author, 1989. 23 pp. (ED 307 940)

In fall 1987, a survey of the Chief Academic Officers at 62 State University of New York, City University of New York, and independent two-year colleges identified 102 programs successfully serving students with special needs. Of these programs, a sample of five designed for adults in need of training/retraining was selected for further study. Follow-up investigations sought to determine such information as the program's source of funding, program staff, college type, program objectives and components, clientele demographics, and characteristics of successful participants. Findings, based on interviews of written reports by 16 two-year college staff members, included the following: (1) all five of the programs received financial support from both the Carl D. Perkins Vocational Education Act as well as their college, while only two programs received additional funds from outside agencies and/or fees; (2) all of the programs provided counseling, advising, and testing services; (3) 50% of the program participants were between 41 and 50 years of age; (4) 62.5% of the participants were enrolled part-time or took an occasional course, while 37.5% were enrolled full-time; (5) the most common reason given for enrolling in credit courses was to "upgrade employability potential"; and (6) characteristics of successful participants included, a personal sense of achievement, self-assurance, and becoming involved in college activities.

State University of New York. A Compendium of Postsecondary Programs That Serve Special Needs Populations Targeted by the Carl D. Perkins Vocational Education Act. Albany, NY: Author, 1987. 127 pp. (ED 285 610)

A project was undertaken by the Two-Year College Development Center to identify programmatic efforts in New York State two-year colleges that were effectively serving special needs populations and were due, in some measure, to the Carl D. Perkins Vocational Education Act. The project involved a survey of the chief academic officers at 62 State University, City University of New York, and independent two-year colleges. Study findings, based on responses from 65.5% of the officers, representing 102 programs, included the following: (1) 39 programs served the population broadly defined as disadvantaged, providing support services, advisement, counseling, or targeted outreach services and instructional programs designed specifically for disadvantaged groups; (2) 21 programs served adults in need of training or retraining; (3) 20 programs focused on single parents/homemakers and the reduction of gender-related bias; (4) of the 19 programs that addressed the needs of disabled students, seven specifically targeted the learning disabled; and (5) the most frequently reported outcome of the projects was increased college enrollment, followed by staff expansion and increased computer capability. The bulk of the document consists of brief descriptions of programs and services that were identified as being successful. The entries include identification of program title and college, contact person's name, address, and telephone number, and a brief description.

Wood, George S., Jr. (ED.), and Wood, Alanny (Ed.). Midwest Research-to-Practice Conference in Adult, Community, and Continuing Education. Proceedings (Muncie, IN, October 3-4, 1986) 175 pp. (ED 274 774)

Among other papers this book includes: "The Self-Directed Learning Projects of Employed, Married Mothers" (Boyce): "The Forever Plan: Adult Men Who Continue in Postsecondary Education Compared with Those Who Drop Out" (Brown); "The Tacit Dimension of Practical Knowledge and the Utilization of Research in Adult Education" (Dirkx); "Factors Leading to Job Satisfaction andDissatisfaction in Adult Basic Education" (Heresz and Orem); "Returning Adult Women Students: What Are Their Special Needs?" (Muench); "Program Evaluation in Adult Education: A Survey of Participants in a University Summer Program" (Snoddy and Levine); and "Computer Awareness for Adults" (Young and Vernon).

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Community College Journal for Research and Planning
Volume 7, Number 2

COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

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